



ON
THE HYGIENIC MANAGEMENT
OF LABOUR
IN THE TROPICS

GERRARD

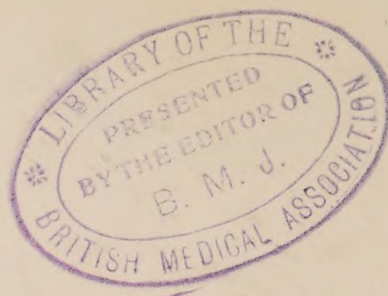
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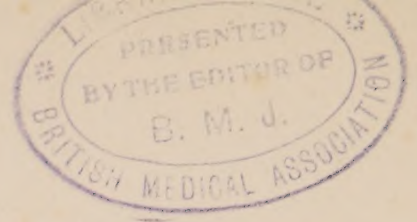


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ON

The Hygienic Management of Labour in the Tropics.

AN ESSAY

(WITH WHICH IS INCORPORATED THE LABOUR CODE BY
COURTESY OF THE F.M.S. GOVT.)

BY

P. N. GERRARD

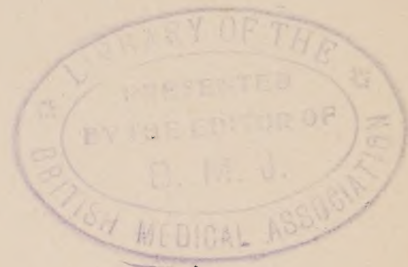
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PREFACE.

In producing this extended edition of my original essay "on the Medical Management of coolies" which—through the courtesy of Mr. H. N. Ridley and my late lamented friend Mr. J. B. Carruthers appeared in March 1907 as a volume of the Straits Agricultural Journal, I am relying to a great extent upon the opinions of the Ceylon and Straits press upon the original as to the advisability of such an extension, to meet the needs of the Planters in these countries.

I have endeavoured to keep on lines which are practical, to avoid controversial matters, and in fine to present to the Planting Community a vade mecum which will not fail them as a reference when they desire advice at the opening of, or during the growth of an estate in the Tropics.

In an Appendix will be found an article from the pen of Dr. C. Vere Nichol the Medical Officer of a large group of F. M. S. Estates, and before criticising *this* essay I would ask my critics—if I am to be honoured by criticism—to digest the method and perfectness of the Dutch system in Sumatra before proceeding to judge me guilty of any idealism in this essay.

Particularly would I draw attention to the treatment of "new arrivals" amongst the Labour forces in Sumatra. Dr. Nichol writes:—

"They are first sent to Hospital for a fortnight, kept under observation, treated with Quinine if indicated by an examination of the Blood, and by a course of Thymol if Anchylostomiasis is present."

The Hospital Death rates there ranged from 10.21 per 1000 to 16.89 per 1000 in 1909, the observations including six Hospitals. and again:—

"Patients are brought to Hospital by Special Spring Ambulances."

"The equipment is quite up to date in these Hospitals, quite as good as that found in London Hospitals."

Taking now the other side of the picture, in the Indian Immigration Department report for the F. M. S. 1911, we read:—P. 4 paras. 1 and 2.

"Many of the Estate Hospitals were very unsatisfactory, particularly in some parts of Selangor and it was difficult to get improvements effected."

"The practice of not sending sick coolies to Hospital is all too common."

In quoting these remarks it is far from my intentions to arouse controversy or jealousy, but I am convinced that it is in the best interests of labour to quote such facts here.

The task, which I have set myself in this essay namely: The exposure to the Planters of some of the commonest pitfalls on the road of Hygienic Estate Management, and the measures by which they can be avoided, has been one of great pleasure to me, and the fruits of the task I shall eagerly look forward to, namely improvement in the Health of the Labour forces.

It must be remembered that in dealing with Tamils one is dealing with what I must call a delicate nationality, deeply infected with intestinal parasites and frequently half starved during their youth. The Javanese case is hardly so serious as their Kampong life has been more healthful. The Chinese case it is hard to make any general statement about as a great deal depends on the part of China from which they come, but on the whole I should say the Chinese cooly is the most resistant to disease of any of the nationalities we have to deal with, and when we prevail upon him to adopt Kampong or parboiled rice instead of the Beri Beri producing polished rice, they will be an exceedingly valuable—if expensive—Labour force.

One thing is certain in connection with Labour all over the world and that is; that *any labour badly housed on insanitary sites with questionable water and food supplies and insufficient medical attendance, must break down.* Such is the case from the economic standpoint, but the other side of this picture is perhaps more serious although far off as regards Tropical Labour namely:—When the labour forces begin to realise that they are not being treated under reasonable Hygienic conditions then the troubles will commence in earnest.

The secret of the prevention of labour troubles will I am convinced be found to lie in the provision of Healthy Houses and surroundings, health giving sports, aids to personal cleanliness, and good and cheap food stuffs.

To the Planters of Malaya I would say forgive my short comings, my friends! and work continually for the improvement of the conditions under which your labourers live.

Remember Disraeli's famous dictum when defending the Public Health Act in 1875:—

“Sanitas Sanitatum omnia Sanitas.”

If by happy chance you find help in the essay, if by following the precepts I have written you can produce and maintain a healthy labour force, then shall we rejoice together in the reward of our mutual efforts.

P. N. G.

Kuala Kangsar, January 1913.

THE CEYLON OBSERVER.

Saturday Evening, April 20th, 1907.

The Medical Management of Coolies on Estates.

SOME HINTS FROM THE MALAY STATES.

Mr. P. N. Gerrard, a medical officer in the Federated Malay States who has gone carefully into the subject of the medical treatment of estate coolies and the sanitation of coolie lines on estates, writes an interesting article on the subject, with special reference to conditions prevailing in the Malay Peninsula in the "Agricultural Bulletin of the Straits." He first gives some general advice to planters about their own health, which contains nothing original so we need not quote. Mr. Gerrard writes in an easily read style as some of the extracts we make show. At the beginning he postulates that "a dead or broken-down coolie is of no practical use on any estate."

FIRST AID FOR COMMON DISEASES.

The next few pages of Mr. Gerrard's article are good. He treats of the principal diseases coolies are subject to; he briefly describes the principal symptoms and suggests the soundest "amateur treatment" to be adopted as an immediate and first measure by the planter. The several diseases dealt with include: malarial fever, dysentery, diarrhoea, anchylostomiasis, debility, ulcers, worms, elephantiasis and varicose veins, leprosy, sprue, small-pox, plague, cholera, dengue, measles and phthisis, &c.

MOSQUITO CURTAINS FOR COOLIES.

Dealing with malarial fever, Mr. Gerrard gives advice which—though it may be sound—is, we think, impracticable, and most planters will ridicule it. He says: "The necessity of sleeping in mosquito curtains must be 'rubbed into' coolies; the Chinese have adopted them and there is absolutely no reason why the Tamil should not be educated up to their use." Regarding anchylostomiasis, he takes a leaf out of a recent Ceylon circular *re* "compelling coolies to wear shoes and gaiters or putties when at work, or in smearing their legs with some sticky substance." Apart from these two cases, Mr. Gerrard's directions are of much use to planters; and the article is a timely one. Plans and estimates for semi-permanent and permanent lines and latrines, by Mr. W. A. Wilkinson, A.M.I.C.E., are appended.

PINANG GAZETTE AND STRAITS CHRONICLE.

Tuesday, 16th April, 1907.

The Medical Management of Coolies.

Planters will find the March number of the *Agricultural Bulletin of the Straits and Federated Malay States* of more than usual interest for it contains an article by Dr. P. N. Gerrard on the burning question of "The Medical Management of Coolies in Malaya," with an appendix of Plans and Estimates by Mr. W. A. Wilkinson. We offer no apology for quoting from it at length, and perhaps when planters see what valuable material Mr. Ridley can offer them in the *Bulletin* they will begin to support that publication more freely than they have done hitherto.

Before dealing with the coolies the author offers some excellent practical advice to managers and assistants.

After this excellent and practicable advice, the author proceeds to deal with the "Principal Diseases of the Coolie," naturally only briefly as the publication is intended for the layman and not for the doctor. Malarial Fever, Dysentery, Diarrhoea, Anchylostomiasis, Debility, Ulcers, Leprosy, in fact practically all the ills that Rengasamy is heir to, are touched on and we can find nothing to criticise here except perhaps one rather doubtful point in the diagnosis of small-pox and the diet recommended for cases of sprue which would make a V.A.'s hair stand on end.

But these are comparatively trifles, and altogether the compilation may honestly be described as an accurate, careful, and common-sense description of the chief diseases to which estate coolies are liable. It should be of great value to managers, as giving them some broad idea of diagnosis and treatment. In nearly every case the information is modern and reliable and Mr. Wilkinson's plans and estimates give the work an additional practical value. *The only objection is that it would have been better if the material had been extended a little, a course which was obviously impossible in the circumstances.* The space at the author's disposal is really too small for the articles to be of as much use as would otherwise have been the case.

As it is we would recommend every planter to study the March number of the *Agricultural Bulletin*; they will realise that they owe a debt of gratitude to Mr. Ridley, Dr. Gerrard, and Mr. Wilkinson.

THE MEDICAL MANAGEMENT OF LABOUR IN THE TROPICS.

By P. N. GERRARD.

Whilst the cry of "Rubber! Rubber! and large profits!" resounds throughout Ceylon and the Straits and is wafted abroad from these countries, may I be permitted, in the interest of both the capitalist and the coolie, to draw the attention of employers of labour to a few points which seem to me to affect the future of the industry; certainly in this country, and probably in every country wherein a large amount of labour is employed.

Firstly, then, I would point out that all the wealth in the world will not profit a man broken down in health.

Secondly, that a dead or broken down coolie is of no practical use on any estate.

Thirdly, that unless due precautions be taken, both these lamentable eventualities are at least liable to occur.

As it is my purpose to deal principally with the conditions of life of the coolie—the pawn upon whom the question of profits must to a large extent depend—it will probably be sufficient preliminary advice in dealing with my first point if I say to managers and assistants:—

Build your houses on open, elevated, long-cleared land if possible, let them face the prevailing wind, that you may obtain the full benefit of the evening coolness; do not lie about in wet clothes; sleep under a mosquito net; eat and drink moderately; work hard, but don't overdo it unless absolute necessity demands. Take every reasonable opportunity of getting away from the Estate—specially up an hill—and when you get "played out" or really "seedy" look to it at once.

Remember that malaria, bowel-complaints, and severe colds, are serious diseases, and if undealt with frequently leave sequelæ which neither money nor science can deal with; and lastly, wear flannel if you can.

Health data for House Sites.

The question of sites for Bungalows on Estates is one which has not received sufficient attention in the past, and many unhealthy, in fact dangerously unhealthy, houses have resulted.

It is difficult to epitomise the points upon which the healthiness of a site depends in the Tropics, and equally difficult at the opening of a new Estate to arrive at a decision as to what spot in say 5,000 acres of virgin jungle will probably be the most healthy.

Then again if a site from its general position and surroundings be considered good, mayhap that site is the most inconvenient spot in the whole property from whence to administer the Estate.

It can easily be understood that *ideal* methods of site selection and treatment are not commonly practicable, and it must not be expected that all the data given here can be complied with: the majority will be feasible however, in many cases of estates with road frontages, or roads passing through, and if I succeed in directing the attention of Planters to the main points to be observed concerning sites, I must endeavour to be content at that.

The Ideal system I think would be somewhat as follows:—

Having inspected the property on all available maps and plans, by means of “drives” through the jungle, and having consulted any natives who have been living in that neighbourhood for some time (a valuable precaution frequently overlooked) a convenient area from the administration standpoint should be selected, observing as far as possible at this early period the Health data given below.

The draining of this area should be pushed on with early in the general clearing scheme, and it is advisable that the area should be sufficient and suitable not only for the main Bungalow but also *at a reasonable distance*, for some cooly lines, an Hospital or sick Ward and houses for the Subordinate staff.

It is difficult to lay down what the extent of the area should be and much depends on the lie of the land, but I should say that it should certainly be not less than 30 acres.

Having provisionally selected and drained the area early in your clearing scheme, and having had the good fortune to get a “good Burn” the closer inspection of the site will be possible, for small streams, pools, ponds, the direction and outlet of drainage, position of roads, houses, hospitals and lines and last but not least, the possibility of obtaining good water from hillocks in the vicinity or wells, deep or shallow.

Supposing that the land be flat, that the Natives and their children round about are healthy, that water can be obtained and drainage arranged for on the catch pit system, the drainage of the site should be proceeded with before the erection of any buildings.

It may be necessary to drain valleys around and about the site, and if the land be upland with gullies and ravines the longer the site can be left after felling, burning and draining before the erection of buildings the better.

The mosquitoes of the site should be identified if possible before the drainage is put in, as it may be possible to save a considerable sum at first on drainage account, if a species predominate, which can be exterminated by graded earth drains properly upkept, while places carrying Anophelines should be dealt with at once.

In certain hill areas however where streams abound I am quite convinced that if all the streams are open-concrete drained at first—even at considerable expense—the result will cost less in good men and money than the economy of earth drains or even panama tile drains.

GENERAL HEALTH DATA FOR HOUSE SITES.

1. Native holdings are generally safe.
2. Malays say the bends of rivers on the impingeing side make unhealthy sites, the short bend or "taking off" side (as the river flows), being permissible, but they as a rule prefer sites on a straight stretch of a river.
3. Hills with foot streams are unhealthy owing chiefly to the Anopheline *Nysorrhynchus Maculatus* (formerly incorrectly classified as *Willmori*, the latter it is said has never been found in this country yet) which finds there a suitable breeding place.
4. The presence of marshes, near bungalows and lines is to be avoided as other Anophelines *known to carry Malaria in the Federated Malay States* are pool or swamp breeders and two species are carriers elsewhere in the tropics and strongly suspected as carriers in the F. M. S.
5. A fall for the general drainage is advisable but arrangements can generally be made to grade drains towards a rough septic tank (vide Appendix P.) even on the flat.
6. Provide sufficient extent of clearing to allow of proper circulation of air; the distance from jungle or rubber should be at least 600 feet.
7. Chalk soils are as a rule safe but rarely met with over any considerable area.
8. The neighbourhood of decomposing granite has been stated by many observant Engineers to be unhealthy, the possible explanation being that as the granite "washes out" pools and rivulets form.
9. Natives dwelling nearby—especially the children—should be medically examined for splenic enlargements consequent on Malaria.
10. The probable salubrity of a site varies directly with the distance from jungle in the absence of special foci. According to Dr. Watson's monograph p. 65 published by the Liverpool School of Tropical Medicine the spleen rate appears to halve itself every 300 yards from jungle, and outside 1,000 yards becomes almost negligible, i.e. if 50% represent the spleen rate inside 300 yards from jungle, 25% would about represent the rate at 600, 12% that at 900 and over 1,000 yards anything from 0% to 3%.
11. Hill sites generally speaking are to be avoided, although the system of treating the hill site scientifically before building has, I consider, been neglected.

I may perhaps be permitted to enlarge upon this point:—The town of Kuala Lumpur (48,100 population 1912) is a town surrounded with hills and hillocks; foot streams, gullies, marshes and every malarial convenience, abound in the vicinity. There has probably always been some malaria present* but about 1906 the disease

* Travers, McClosky and Fletcher suggest that there was no local Malarial before 1905 in K. L.

increased generally over the public, the Europeans suffering as well as the Natives.

Up to that date the only measures taken against the disease had been to clear undergrowth in the vicinity of houses and in the town—a similar measure to that adopted on an estate when building is commenced.

Result, all pool-breeding anophelines (including *Myzorrhynchus Umbrosus* or *Petagiomyia Umbrosus* (incriminated by Dr. Watson) there are now—24. 11. 11 as I have stated above—at least two other species of pool or marsh breeding carriers known) settled in pools near the houses or even perhaps bred in the water in gutters and such like places, and by the dispersal of small animals and birds consequent on the clearing, were driven to suck blood at the nearest point which unfortunately was usually at a dwelling house.

Now the supply of servants in Kuala Lumpur has to some extent been drawn from the broken down or lazy mining or contractors' coolies, who have lived under insanitary conditions on mines or newly opened places.

This class are deeply infected with malaria.

The servants quarters are very close to the Bungalows, the verandahs of their quarters being frequently within 20 yards and some cases within even 20 feet of the house and these quarters almost invariably are built facing the houses.

The chain of infection would appear therefore to be complete, and I submit that in the light of later experience this explanation of the infection of Europeans is a very likely one to account for the origin of primary outbreaks. To deal with the Kuala Lumpur outbreak, imperfect measures were taken over a very scattered area, jungle being cleared before the drainage was started.

A continued gradual increase (naturally as we now say) occurred, and will probably continue until all undealt with areas are efficiently treated, and no suitable stream or pool exists for the propagation of carrying-anophelines inside the sanitary or anti-malarial area.

Now applying the Kuala Lumpur past experience to the Estate hill-site question, I would impress this system upon Managers, as the method shown by experience to be the proper one of treating malarial areas:—

Briefly it may be summed up in the few words “do not clear the site at first” unless such clearing is imperative.

In the case of a malarial gulley the procedure should be this:—

With as little disturbance of jungle and undergrowth as possible, the main stream is treated, i.e. the banks are trimmed and sloped to a V shape, this drain being perhaps put in as a concrete invert or even earth drains at first.

The stream can frequently be treated by “Simms drains” but usually a concrete invert which is calculated to be capable of carrying off the storm water is the most satisfactory as it can be observed throughout its length.

As regards the subsoil or "Simms" drains, it will be best to quote from Mr. Simms' own paper I think—Mr. Henry Simms writing in October 1908 in a paper entitled "Subdrainage as applied to the Anti-malarial campaign on the Isthmus of Panama," (to which paper I had the honour to draw the attention of the Selangor Government in May 1909 with the result that the first tile drain was put in Kuala Lumpur that year and found to act well See Health Officer Kuala Lumpur's report 1909) writes:—

"The maintenance of the open ditch system, involving regrading, filling holes scored out in heavy rains, removal of vegetation and algae, application of larvicides, the fact of the collapsing of banks and continual inspection, were so expensive besides being unsatisfactory, that the authorities found it necessary to use some more permanent methods involving less annual expense in upkeep. They recognised that *while there was water within reach of mosquitoes* there would be larvae, as experience has shown that with the greatest care in the use of larvicides, and with the best inspection, larvae would escape destruction. They reasoned that the only practical method, in view of maintenance costs, was to get rid of the water. Subdrainage was considered, and a first shipment of tile was ordered and installed. The success of this was so complete that extended sub-drainage was decided on.

Tile drain work was started early in 1906, but it was not until towards the end of the year that sufficient was laid to begin to show its effects. During 1907 the work was vigorously conducted."

The screening of all buildings and the administration of quinine was also carried out.

"As a rule, the breeding areas giving the greatest trouble here (Panama), besides small streams, swamps, and low-lying soggy land, are seeps on the sides and at the bases of hills from water following small areas of impervious strata. At Ancon this is specially marked. They are difficult to find, and the smallest depression holding water can breed enough *Anopheles* to send up the rate for a given camp."

"The tile used was of three sizes: 4", 6", and 10", porous and unglazed. Where the tiles had to receive seepage water only, they could be laid at grades as low as one-half per cent, care being taken to *place a wisp of grass over the joints*. If the soil was very bad the pipe could be surrounded and covered for about four inches, with coarse gravel or crushed rock, and the trench filled with earth other than clay. It is necessary to make systematic borings with a 6" augur to determine the direction of flow in the soil. Here this often follows an almost vertical direction, causing the trenches to be very close or very deep. As a rule, however, the main tile follows the course of a small stream, with feeders coming in from the side seeps. Here the problem is to lay a pipe, as a general rule

through stiff clay, so that a considerable torrent can pass over it, and such that a few hours after it will remove every drop of water and suffer no damage from erosion. Such a pipe has of necessity to pass silt in quantities during freshets. Experience has shown that *a 6" pipe will satisfactorily pass silt at a grade of one per cent, and a 10" pipe at a grade of one-half per cent.* These grades can be made 'flatter' if a head can be obtained to act on the pipe, but should be avoided if it is possible. *Should 'flatter' grades be required, concrete ditches or stone ditches set in cement mortar should be used."*

"In starting operations on a valley, the first thing to study is the best method of straightening the stream with a view to getting greater fall and a shorter distance. *If the grade exceeds 5 per cent, small waterfalls should be introduced* to break the velocity over the surface, during floods. The pipes should be laid at least 2' 6" below the bed of the stream, the trenches should be carefully graded with an instrument and the pipes laid evenly and true, with joints open to the extent of $\frac{1}{8}$ " to $\frac{1}{4}$ ". They should be firmly imbedded in crushed rock on all sides, *extending at least 4" above the tile.* Rock, broken to about 4" cubes, should then be filled in up to near the surface and *the last layer finished off in heavy stone* if the scour is great. Some small stone must be placed at the top to prevent a too free entry of silt in the first rains. All side branches should be treated in the same way, and should connect to the main with Y junctions. When surface water has to run in volume over the pipe, *the outfall* should be carefully planned so as to pass the water away quickly, and *should be strong enough to stand the scour* that occurs at this point."

"It would appear probable that after a short time the porous stone placed over the pipe would completely clog, but this does not occur. What actually happens is that the first heavy rains completely cover the stone with about 2" of coarse gravel or earth. *The grass quickly grows over this and forms a complete mat over which the rain runs without harm.* The air from below keeps this mat very porous, the mat then acts as a filter for future rain. Care must be taken to cut down any trees the roots of which will interfere with the pipes."

"In the case of seeps, if the borings made do not give sufficient data, two or more holes must be dug and the slope that the water is following determined. This is sometimes so steep that parallel pipes have been laid 10' apart and 5' deep to catch completely the water, as it is essential that all water should be intercepted."

"With regard to cost, it must be remembered that the cost of transportation and labour is exceedingly high on the Isthmus. A good labourer receives \$1.80 per day U. S. currency. Some work would be in inaccessible valleys, and complete roads would have to be built. Rock would often have to be transported by train and then carried over hills. This transport-

ation has made the work considerably more costly than it would be in other places. The average cost of the tile put in so far is about 35 cents per foot, about 1s. 3d. of which is the first cost of the tile. The cost of maintenance of open ditches for the year amounted to 25 cts. per foot, so that in less than a year and a half the work has paid for itself, apart from the great reduction in malaria and the great saving in the cost of the care of the sick. The work is yet far from complete, and much remains to be done."

"From the experience gained here it would appear that sub-drainage work is the only practical means, taking into consideration the cost of upkeep, for permanent anti-malarial work. In a climate such as this, and where *Anophelines* breed in clear running water during all months of the year, the annual expense of the open ditch system is prohibitive."

Nothing new has been added to this system since its introduction in Panama in 1906, and Mr. Simms deserves the credit of applying the system to anti-malarial works, although it is probable that tile drainage of sorts has been known for ages, and the fields in the midlands of England have been subsoil drained for years. (The italics are mine and seem to emphasize points of importance which are some times overlooked in our works in the F. M. S.).

If grass be not grown over the pipes the number and severity of "washouts" is greatly increased.

The order of events then should be as follows:—

a. In order that disturbance of the adult anopheline and of the birds and animals of any place may be avoided, no jungle nor undergrowth beyond what is *absolutely necessary* in the path of the proposed drain should be felled, cleared or even disturbed. Some authorities consider that the clearing *assists* the propagation of the *Anopheline*.

b. The drain should be put in as rapidly as possible in the midst of Blukar or jungle, if a subsoil drain it will of course be covered, and grass planted over it either by the stippling method, or by turfing.

The result of this system advocated by me in April 1911 and supported by Mr. Hose,* I claim is that the adult anophelines remain in the shade of their original breeding places, the females continue to feed on birds and small animals, that owing to the draining of the position the females will in all probability proceed to lay their eggs in any water they can find. Hollows of dried leaves and minute pools—which will rapidly dry—are perforce accepted, in the absence of the original stream.

The result of this adoption of irregular, unaccustomed—and by comparison with the original habit—unsuitable breeding places, must be an enormously increased oval, larva and nymphal waste.

The course of development having been disturbed and the adults having the same birds and beasts to feed upon, and the same moist shade to live in, remain amidst the undisturbed vegetation,

*Chairman Sanitary Board, Kuala Lumpur.

and by progressive loss in the developmental stage, eventual extermination should result, if the drainage remains efficient.

After passing through the wet season and when dry weather sets in, if it is decided that the area should be cleared, an investigation of the area for adults and larvae should be done and if satisfactory the felling and burning of the undergrowth should be undertaken as rapidly as possible, all inequalities of the surface or pools and rivulets dealt with, and short grass planted to prevent their formation anew during the rains or storms.

I am much averse to the wholesale clearing of jungle and bluker without draining, which has been adopted in many places with the apparent result of increasing the incidence of malaria in the vicinity. It is in my opinion a useless anti-malarial measure unless *preceeded* by drainage and is only justifiable in cases where for some reason the original site was not sufficiently cleared, and the aeration and ventilation of buildings demand it, and if undertaken even in these circumstances it is necessary that any portions of jungle left standing should be investigated for streams, pools and larvæ and treated on the intra-jungle drainage system.

Personally being familiar with all that has happened in hilly Kuala Lumpur both from the object lessons and correspondence of some years, I am convinced that where a permanent site is chosen and the heavy moulded concrete drain with a good fall can be put in it should be put in. I believe the upkeep will cost less eventually, the draining effect is at least as good if not better than the subsoil; "washouts" of the heavy blocks—except on very steep gradients—are rare in any rain storm, it is open for inspection as long as it exists, should any loss of grade occur it can be seen and corrected at once, but some vital points require attention. (a) The grade must be sufficient to carry off the *dry weather* flow rapidly and it must have sufficient capacity to deal with flood water. (b) It must be kept free of leaves and obstructions. (c) On slopes of over 1-10 the individual blocks should be firmly connected together and form one continuous drain. (d) The edges of the drain must not be above the level of the general surface nearby and should be protected by "Herring bone" waterfalls or Breakwaters to prevent the earth from being washed away from the side of the invert. (e) Springs which arise along the course of the main drain must be diverted into it by "Simm's" (subsoil pipe) drains, continuous inspection provided for, and foot hill drains put in round gullies.

From these points will be gathered the necessity of treating each valley or ravine intelligently, the egregious futility of thinking that a general order or contract to put in subsoil drainage only, or concrete invert drains only, will suffice in dealing with the question of anti-malarial necessities on an estate or in a town is obvious to any one who has seen the magnificent "washouts" and storm destruction, of unsuitable anti-malarial drainage works.

Each valley or even certain small sections of each valley must be treated individually, each on its own requirements, and as we rise to the head of the area to be treated it will frequently be

necessary to pass from open inverts to subsoil drains, and perhaps back again to open inverts, if we are to obtain "value for our money" which in this case simply amounts to freedom from destruction of whole sections of the work by storm water.

The drains along the foot of hills contouring round the valley must not be forgotten; they are required to carry off the hill wash which would otherwise reach the ravine and overload the Simms drain.

Quite apart also from the question of financial loss involved by the "wash out" of part of the system, is the important point that renovation takes a considerable time, and the health of the area which *had been* protected may seriously relapse during the delay in relaying.

But I think I hear my analytical reader say "what's the use of these generalities," and so I shall endeavour to lay down definitely some negative "data for anti-malarial drainage" gathered from experience at particular places in the Federated Malay States during the past 16 years.

Don'ts for Drainage.

- a. Don't put in subsoil drains at a steeper grade than 1-30.
- b. Don't put in any drains unless you are prepared to make annual provision for constant inspection, upkeep, and a reasonable sum for repairs.
- c. Don't clear the country side before you have investigated the conditions as regards streams and pools, and the presence of larvæ (anophelines more particularly) and having familiarised yourself with the conditions. Put in your drains first, then leave them to reduce anopheline production for some months and then fell and burn off during drought if you must fell. It has been suggested that clearing alters the species present but if the drainage be upkept all species will tend to disappear.
- d. Don't stop taking or giving out quinine in a malarious place when you start putting in your drains.
- e. Don't stop taking or giving out quinine in a malarious place when you have *just finished* putting in your drainage; let some one else try the experiment!
- f. Don't imagine that malaria will die out immediately the drainage is finished, but continue to extend your investigations round the area drained, and deal with places containing larvæ when found.
- g. Don't make a contract for subsoil drains only. Each valley must be treated with intelligence, and many places in any valley may require a stretch of open concrete drains between stretches of subsoil drains.
- h. Don't forget that if you wish subsequently to cover concrete drains for greater safety, you can do so with many varieties of material, *e.g.* concrete perforated blocks (built with expanded metal or not), planks, if the

- position gives a reasonable chance of their "paying their way" as far as endurance is concerned, etc., etc. Always arrange for inspection manholes in cases where you cover.
- k. Don't forget that subsoil drains are made of fragile pipes with a heavy weight of "metal" above them in a soft country (F. M. S. and Straits), and that inspection points along the drains should be provided in order to ascertain from time to time that they are in working order.
 - l. Don't lose sight of the fact that the subsoil drain was proved to be a most valuable anti-malarial measure in Panama by H. Simms.
 - m. Don't forget any of the component parts of the classical subsoil drain (as has been done in many places).
 - a. The ditch (deeper than the stream by 2' Simms).
 - b. The pipe (never less than 4").
 - c. The mattress of straw* in the case of Panama, lalang in this country (almost invariably omitted here).
 - d. The large metal (3" to 5" grade).
 - e. The small metal (1" to 2" grade).
 - f. Earth (not clay) to a depth of at least 12" over the top.
 - g. Grass sods or stippled in over all, to check the wash.
 - n. Don't forget your contour drains, especially when dealing with swamps and marshes surrounded by hills.
 - o. An important point which cannot unfortunately always be provided against, in connection with buildings and works in the tropics is:—That skilled labour on piece work such as masons, joiners, woodcutters, should not be permitted to live *on the site* which is to be the health area, if this can possibly be avoided.

Many instances of the infection of new houses, sites, and even areas can be quoted, the infection being simply due to the fact that 50% of the workers were saturated with malaria, and while living on the site they saturated the Anophelines.

Let us now pass on to the consideration of the conditions most suitable for the maintenance of the health of the labour force remembering always that *the more healthy the estate* the easier it will always be, not alone to obtain labour, but to retain it, and even in some cases to build up "weedy coolies" so that they become valuable assets.

The Coolie's Health.

LAWS FOR LINES.

There are certain fundamental necessities for the establishment of a healthy labour force.

1. A pure water supply.
2. Adequate ventilation.

* over the joints.

3. Some inexpensive but efficient system of Sanitation in and around the lines.
 4. Sound drainage.
 5. Immediate "first aid" in illness or accident.
 6. Separation of the sick from the healthy as soon as possible.
-

Water Supply.

WELLS.

With regard to water supply, if the well system be adopted of necessity, then remember that the "circle of influence" is at least 20 yards, and that sewage contamination has been traced to upwards of one mile. If the lines are permanent the wells should be bricked inside and surrounded by a raised coping and a cemented and graded circle of say ten feet from the coping all round, the water used for bathing or otherwise spilt should be run off to a distance, the well should be covered, and all water drawn by a pump.

A simple method of testing whether a well is contaminated by sewage in its vicinity is to pour a solution of fluorescin into the nearest drain or cesspit and observe whether any fluorescence occurs in the well water.

Fluorescin Test.

One quarter to half a pound of fluorescin dissolved in water and poured on to the suspected source of contamination, whether it be a manure or refuse heap, drain, privy, cesspool, or other object in or on the ground, will, if there is any communication as suspected between this and the well, show itself in course of time (about 24 hours) in the well by giving to the water a fluorescent tint.

In order to facilitate the passage of the solution of fluorescin from the suspected source of contamination to the well, large quantities of water should be poured on after the fluorescin, and the well should be pumped out so that the flow of the drainage is towards the well. If the well water becomes green, suspicion becomes a certainty. But to avoid the possibility of acidity in the water upsetting the test, caustic potash is often added to the fluorescin before use, or it may be added to the samples of water when searching for the fluorescin after it has been poured into the suspected sources.

Speaking generally the deeper the well the better, and if any hard stratum exist in hills in the vicinity, artesian water may perhaps be struck at a reasonable depth.

All tanks and wells should be protected from the entrance of surface flood water, unless the surface over which the water flows is above reproach. If, on the addition of 4 ozs. of permanganate of potash to an ordinary-sized well, the water does not become and

remain pink for about an hour, the water must be looked upon as doubtful, and measures should be taken to purify it further or to have it analysed. The permanganate should be mixed in a bucket of water before being poured into the well.

In the lowlying stretches of country which are met with in the F. M. S. more especially in the coast districts, where the water becomes brackish at say three feet and a half to five and a half feet, the question of the best method of protecting the water supply is a very difficult one but a few points seem to be obvious:

1. That a large area surrounding the well must be protected from contamination.

I am personally inclined to place the inside limit at 75 feet all round, but I should prefer a reserve of 100 feet. In this area there should be no cultivation of Rubber nor vegetables, but I consider that grass might be grown with advantage. There should be a swing gate in the surrounding fence, and a properly constructed path rammed hard, and sanded or covered with laterite gravel should lead to the delivery pump.

All bathing wells should have a proper concrete invert at the edges, and a cement concrete area all round with a drain to carry off the bathing water.

2. That in order to prevent the dipping in a drinking well of soiled or infected buckets, it should be covered with wood or galvanised iron sheeting *and a pump used* to draw the water. Surrounding the pump area there should be a cement rendered place to catch the washings and these should be borne to a distance in a cement or brick drain.

It is preferable and safer if the water be delivered outside the fenced area.

The sides of this well should be loose bricked to whatever depth it is possible to get water on the particular estate in question, the rain water off the Galvanised Roof might be permitted to fall round the wells, to soak through the soil and bricks and thus to maintain the water supply.

The size of such a well will vary with the district and the rainfall but I can see no reason why larger shallow wells than those which are at present in vogue should not be adopted and the water supply on these unfortunately situated estates thus increased.

It will, I consider, in any event be advisable for Managers to search for good water before expending money on wells, as there are to be found now many estates where a well yielding good water can be found about 50 feet from a well which is useless; shallow bores should greatly assist. I am aware of the expense which will have to be incurred in cutting out rubber for the formation of such wells as I suggest, but Managers in the districts to which these remarks apply will please recall their last spell of dry weather, their expenses in carting water, increased sick rates (or even cholera outbreaks) and the general misery of themselves and their coolies when deprived of water, before they start the argument concerning the value of Latex as compared with Water.

Certain measures which are considered necessary for the protection of these water supplies are now laid down in the Labour Code which is attached to this pamphlet as an appendix through the courtesy and generosity of the F. M. S. Government.

STREAMS.

Pure streams from the hills yield usually good water in this country, aqueducts of bamboo are cheap, and can be made over long distances satisfactorily. ALWAYS INSPECT THE CATCHMENT AREA.

RAIN COLLECTIONS.

If rain water is the only source of supply it should be stored in large underground tanks as at Gibraltar and other unfortunately situated stations.

RIVERS.

All the rivers of this country are polluted to some degree, and if river water is the only possible source of supply it *must be* treated. That portion of the river near the lines should be divided into three parts: (1) An upper reach for the drinking and cooking water: (2) A middle reach for watering cattle: (3) A lower reach for washing.

Treatment of River Water.

That all river water requires purification in the Tropics I lay down as an Axiom.

Many outbreaks of disease and even widespread epidemics have been traced to the drinking of unpurified river water. The purification will consist of the following main principles:—

- a. *Sedimentation.* To remove the coarser suspended matters such as clay, sand, vegetable matter, and such like.
- b. *Filtration.* To remove the finer suspended matter and a certain percentage of the Bacterial content, which action will vary directly as the efficiency of the filter used. The efficiency however will also vary directly as the time of passage through the filter, So that for high efficiency we shall require a long time, which in the case of the supply to a labour force is a matter of serious consideration.
- c. *Sterilization.* (1) By boiling (2) by other methods.
 - (1). This process renders water innocuous and wholesome but has the disadvantage of rendering it "Flat" to the taste.
 - (2). Of other methods there are a large number, ozonisation, by electricity as is applied to the water supply of Marseilles.
The Jewill process, a rather expensive equipment, which is criticised rather severely by some Engineers who have had experience of its working,

and which in the F. M. S. will I consider probably require sedimentation arrangements before the usual class of river water found here can be admitted to the apparatus.

The Griffiths water sterilizer is in use in the British Army, which is a sufficient guarantee of its efficiency and rapidity. The Laurence system, similar to the Griffiths, is well spoken of.

Ventilation of Lines.

Ventilation of lines, etc. The question of ventilation involves little extra expense, as obviously the less we place between ourselves and "God's good fresh air" the less it will cost us in houses, and yet the better we shall be.

One of the best types of lines which I have ever seen was a converted sugar factory. The building consisted of a large expanse of roof, tiled and with brick drains round the building.

In this—after the quallies etc., had been removed—partitions were erected forming rooms 12' x 12'. A space at the floors of about 6" was left open and between the rooms which were back to back a passage of about 4' existed.

The air circulated over and through the rooms and the expansive roof rendered the lines cool.

Lines built on some similar plan and say 3' raised from the ground would I believe be satisfactory.

One of the most important points about all buildings in the Tropics is a large expanse of roof.

Brick drains are usually insisted upon by the Health Department F. M. S. in the case of permanent lines. Even on estates where no revenue can be expected for some years I think they are advisable from a Health standpoint.

If brick drains are not put in the earth between the lines is used to dump stale rice and remnants, and the soil becomes saturated with decomposing vegetable matter and consequently exceedingly offensive.

Some of my planting friends will realise that the above statement is a change from my previous attitude towards the brick drain, as I have in past years expressed the opinion that if the surroundings of the lines were kept sanded and sloped, brick drains were not necessary, I now consider that the brick drain is a necessity and I could point to estates where they had not been put in which, from the flies and stench at the lines, would rapidly convince one of the necessity for a drain which could be flushed out clean.

With regard to temporary lines which may be advisable in some cases for the proving of the healthiness of a particular site or again on young estates may be necessary from a financial standpoint, the simpler they are the better. A large roof area is always advisable and if earth drains are permitted they should be well graded and the out fall carried to say 50'.

The rooms should be raised off the ground I consider in such types of lines to a height of say 5'.

A Jack roof will not materially increase the cost and will undoubtedly assist ventilation.

The lines should not as a rule face the west as coolies frequently hang dirty sacking and such-like in front of their rooms and fire places to keep off the afternoon sun.

The ventilation of lines will depend principally on the area of open land round them and as much open space as can be spared should be spared for this purpose.

I submit through the courtesy of the F. M. S. Government in an appendix the plan of lines approved by the F. M. S. Government ; variations of this plan have been erected on many estates, and personally I think the type with verandah outside the rooms, well raised off the ground and cemented underneath, is as good a labourer's quarters as one is warranted in expecting in the F. M. S. at present. Examples of these lines may be seen amongst other estates on Sungei Rengam (manager G. H. Bennett, Esq.) and on Bukit Jelutong (manager C. R. Harrison, Esq.).

I am not sure whether a more permanent type than even the present Government lines will not in time be adopted by the Planters. When the absolute soundness of rubber becomes proven, "when the markets cease from bubbling and rubber is at rest."

The F. M. S. Railways have adopted a permanent type which may well insinuate itself on the estates when the present period of "paying out" becomes converted into one of plenty and fixed prices.

Through the courtesy of the General Manager for Railways* I am enabled to state that the cost of the Railway type of lines is \$462.50 per room, and the upkeep, \$5 per room, including lime wash, etc.†

In discussing lines I find I have wandered somewhat from my heading "ventilation."

On many estates the health of the labour force has suffered owing to the lack of air-circulation round the lines ; rubber, vegetable gardens, and even jungle surrounding the living rooms acts as a wet blanket, the damp never leaves the lines, the sunshine is cut out and thus nature's greatest purifier—which costs nothing—is prevented from oxidising and destroying noxious material.

Since 1894 the Casier Sanitaire of Paris have been carefully considering the question of darkness and absence of air circulation in dwellings in their relation to consumption, and the conclusion come to by the Chief of the Dept: Mr. Juillera is this. "The darkness and absence of air in inhabited rooms is the enemy to be fought against and pursued without mercy."

"All the other factors in the propagation of consumption ; however grave these may be ; are not *as murderous* as the absence of the light of the sun."

* "G. M. R. 532/12."

† I can see no objection to detached rooms which are in use on some estates, provided the drainage of each is good.

It would be unfair of me to state that consumption is a common cause of the general debility, inability to work, or even a cause of the high death rates which occur now amongst labour forces, but I must state that I believe investigation of the point very advisable.

It will be advisable perhaps to epitomise rather than to dilate upon this ventilation question. I shall submit therefore some "Laws for lines" as a companion for my "Dont's for Drainage."

Laws for Lines.

- a.* Lines should not be nearer to jungle than 600 yards.
- b.* All lines should be provided with a jack roof for purposes of ventilation.
- c.* Lines should be provided with latrines at a convenient distance, in the proportion of 10 "places" for every 100 coolies; arrangements for the convenience of females should be made.
- d.* All lines should be provided with brick or half pipe or concrete drains.
- e.* All drains should be connected with either a main drain *which flows*, or with a rough septic tank, continuation of the brick, half pipe or concrete drain to the main drain or tank is necessary.
- f.* Lines sweepers are a necessity and their work should be supervised.
- g.* It is advisable to build rooms 12' x 10' at least.
- h.* A dresser should visit all lines daily to render first aid in all cases of illness or wounds.
- k.* An excessive height of the ground (over 7') is a mistake. Frequent inspection will be necessary to prevent the under part being used as a hen house, store or even additional living room.

Lines on the ground should be cement-floored, this becomes imperative near Plague Foci and large towns.

Some Managers seem to have no difficulty in keeping the under part of lines clear, and on some estates, where cooking underneath is permitted, and the erection of unsightly, dark cubicles prevented, the labourers seem content and the ventilation of the lines is not interfered with.

- l.* Remember storm water when putting in your drains.
- m.* The best surroundings for lines is gravel I think, open, swept clean, and if the lines lie low the surroundings can be drained by a cheap modification of the anti-malarial subsoil drains described above (page 5). In my original paper written in 1906 I described what are called French drains for lowlying places, a series of which were put in at Parit Buntar and Bagan Serai Hospitals about 1905.

These French drains are merely graded trenches filled to about 12" deep with very coarse metal; over this finer metal is put, and then earth, covered by grass turfing, sand

or gravel. These rough and cheap drains acted well in the Krian district hospitals and caused the storm water to dry up in a period which was short enough to prevent mosquitoes breeding out.

- n. Lines near rivers may be provided with tidal gates on their drains for flushing purposes, but the water should be under control by the gates, as spring tides may flood the whole compound, which is not desirable.
- o. The planks of the bed benches should be loose, i.e. not nailed to their supports (see Relapsing fever *infra*).

Sanitation at the Lines.

We now come to the question of *Sanitation at the lines*. Every one who has had anything to do with the Tamil coolie is aware of his roaming habits under certain circumstances, his love of variety and the fields, or preferably the road or pathway, but that Tamil coolies or Chinese coolies or any other coolies cannot be gently but firmly educated I absolutely decline to believe!

Now, under existing Sanitary arrangements on many estates in this country, I submit that the unfortunate coolie who gets "a tummyache" at say 1 a.m., should not be blamed by the inspecting doctor or agent the next day, in the garish sunlight, for filthy habits; in other words "*until proper sanitary accommodation becomes a feature of every coolie lines in the country and a special coolie be detailed to look after the matter, disease must continue to exist amongst the whole class.*"

The type of latrine to be erected is of the simplest, an attap-roofed shed elevated above the surrounding ground level, with a trench or pit to be filled in with a mixture of dry earth and lime daily to a depth of about three inches, the trench protected from storm-water by means of ordinary earth drains around it, and sufficiently removed in its situation from the main water supply to prevent contamination—this will suffice to prevent contamination of the lines area. I attach some plans of suitable buildings.

A type of Latrine is in action on one Estate in Kuala Langat which consists of a cemented trench with sloping sides (also cemented).

At one end is a pump to the river, and about the middle a sluice gate of wood.

Twice daily water is pumped into the trench until fairly full, the sluice opened and the whole trench flushed into the river,—the washings however should I consider be led to a cesspit or Septic Tank in every case and only permitted to enter the stream after natural purification has taken place.

Another type which I am informed is in use on a Selangor estate is on wheels on rails and fresh pits or trenches can be dug as necessary, the old ones being filled up.

In common with all other measures concerning the health of a labour force, constant iteration of orders to enforce the use of latrines on an estate is necessary, and fines which are now legal

under the labour code should be inflicted where breaches of Sanitary rules occur.

It is an unfortunate fact that very little mutual visitation of estates occurs at present amongst the Planting community, so that Managers do not get the experience which some Government Officials do, of what can be, and is being done on Estates within moderate distances of their own charge.

The result of this is "Grooviness" and one frequently hears on inspections, the statement of one Manager that an arrangement or regime which is actually being carried out efficiently on an estate in the neighbourhood is "impossible" on his estate.

With respect I commend to the P. A. M. the establishment of a system of interstate visitations, with a view to enlarging the purview of the stop-at-home, hard worked Managers, who in some instances have never seen "First Class" lines, well kept compounds, anti-malarial measures, nor Sanitary arrangements, in operation, and many of whom would not only learn valuable lessons but—if I know anything of the hospitality of Planters—would enjoy a hearty welcome from their brethren.

Too much stress cannot be laid upon the system of facilitating all sanitariness amongst coolies, at present they are blamed as a all sanitariness amongst coolies. At present they are blamed as a altogether bestial; they have no opportunity of being otherwise unless the European places every convenience within their reach.

First Aid Treatment.

Every estate of over 100 coolies should in their own interests employ an estate dresser who should go round the lines after muster time and send the sick to hospital. He should be made responsible for the proper condition of the lines and should report to the manager and to the Estate Visiting Medical Practitioner any lines found in a bad state.

No sick should be permitted to remain in the lines under any circumstances.

Discipline and system should be the passwords, but in the race for output when prices rule high, I fear both are sometimes lost sight of and overworked managers are prone to consider their coolies health after the factory, and store, which is not really "the Game."

Principal Diseases on Estates, with Especial Regard to the Labour Force.

For obvious reasons it would be improper of me to write a full description of the methods of treatment and diagnosis of disease in this paper, nor would it be possible to do so within the limits of an ordinary essay, but in the interests of both parties I may perhaps sketch briefly the principal symptoms which lead one to suspect serious disease, and suggest a sound amateur treatment to be adopted in such cases.

The following notes will I trust be of use to Dressers also.

MALARIAL FEVER.

The principal disease to which the coolie is liable is Malarial Fever, but if the attacks of this disease remain discrete—by which I mean so long as the attacks are separated by a day or days—one may safely deal with him on the estate by the administration of quinine in 10gr. doses twice daily. If, however, the attacks overlap, and the disease becomes continuous, then an hospital is the proper place for the case. Where it is found that the fever yields to quinine the drug should be continued in 5 gr. doses daily FOR TWO (2) MONTHS, but neglect of this most important “regime of prophylaxis” is the reason for the relapse cases which cause so much invaliding and disturbance of estate work quite unnecessarily. The 20 grs. per day might be stopped in 7 days.

It is inadvisable if the attacks be acute, i.e. accompanied by high fever, prostration, or added symptoms, that the fever stricken coolie be kept on the estate, as the danger of collapse is serious in such cases.

The use of mosquito curtains could, I still believe, be introduced amongst Tamil coolies, although the majority of Managers have given the task up as hopeless. When we read of coolies on certain estates *demanding their quinine mixture*, as has undoubtedly occurred (their quinine education having been commenced in this country) I cannot believe that it is “impossible” to get them to use curtains! Almost all of the lowest class of Chinese Sinkehse use curtains, and it is I believe a matter of meeting Eastern lethargy with western insistence and persistence, to solve the question, and thus reduce the malaria say by 20% which would be a consideration.

In dealing with the question of fever the mosquito naturally comes under notice, and although I have dwelt upon the means to be adopted to combat the existence of this pest, I must make my peace with some planters who still believe that this insect is not the only means of propagation of malaria, by stating that the malarial parasite has been constantly found in the stomachs of certain mosquitoes, but it has not been found in decomposing granite, nor in any of the other earths and clays, etc., which have been blamed as distributors or propagators of the disease. Experiments with infected Anophelines have been positive, and I am quite willing to guarantee or gamble on the result of the experiment of infecting any new-comer to this country by the means of infected Anophelines, provided the doubting planter will make the necessary arrangements with his newly-arrived assistant.

Mosquito houses were the only means adopted by the commission sent out by the London School of Tropical Medicine to that hotbed of malaria the Roman Campagna, and no cases occurred amongst the members of the expedition; and again, the European who submitted himself to the bites of Anophelines which were infected 48 hours previously in Rome, still occasionally gets fever (Mr. WARREN, assistant in the London Tropical School who had an attack while I was studying there).

Of oils and paints to keep off the mosquito there are many. Amongst other I can state from personal experiment that citronella oil kills two species of Anophelines at least, within 30 minutes, and *if renewed* about every three hours, upon exposed surfaces, it effectually keeps them away. Antikito cream is well advertised, but I have no personal knowledge of its efficiency; it can be obtained from the Antikito Syndicate, 6 Great Portland Street, London.

Anti-mosquito measures generally speaking consist in: 1. Filling all ponds; 2. Draining all swamps; 3. Covering all necessary water; 4. Kerosining all large stagnant areas of water; 5. Clearing the banks of all slow-flowing streams and drains; the use of mosquito curtains and the administration of quinine.

In connection with malaria it must not be supposed that a rigor (shivering fit) a hot stage, and a heavy sweat, comprise the whole of the disease, as it has been practically proved that malarial dysentery and diarrhoea occur in the tropics, and that the whole question as to what symptoms malaria shows is dependent upon the particular organ, or part of the body in which sporulation of the parasite occurs. Should sporulation take place in the brain, convulsions and coma will be present, in the lungs a form of pneumonia, in the intestines a form of dysentery, etc. Malaria is not the simple kindly disposed disease which planters frequently imagine.

Much has been written and said of late on the subject of Malaria and its prevention, but not very much has been done as yet to deal with the disease *in situ*, namely, in the unhealthy lines, which from neglect may become hotbeds of this and other diseases. Time should be devoted to the careful watching of the places where malaria develops, in the case of Labour forces their Lines, and until the surroundings of the dwelling places of the sufferers are put in a more sanitary condition or position than they at present occupy little advance towards checking or eliminating the disease will be made.

Under the heading "health data for house sites" will be found a more extended survey of the measures necessary for dealing with malaria radically, but it should be remembered that I am a partisan of no particular system, and I believe that all known measures should be undertaken at the same time in dealing with this virulent and costly disease.

The present Estates Hospital routine is open to criticism in many cases in view of the fact that little time is devoted to microscopic work and when compared with the systematic research which exists in the Sumatran estate Hospitals is sadly behind hand.

Mosquitoes.

It is difficult to know what to write and what to leave out about mosquitoes.

Broadly speaking and from the practical standpoint we divide them into Anophelines and culicines, the differences between which may be stated briefly as follows:—

Certain species of Anophelines carry Malaria and Filariasis, certain species of culicines carry Filariasis, Yellow fever and dengue.

The Anophelines when at rest assume an attitude almost perpendicular to the surface whereon they rest. The Proboscis being apparently in the straight line of the body.

The culicines at rest appear to have a Hump, to rest almost parallel to the surface and the Proboscis makes an angle with the general line of the body.

Anophelines make less noise when flying and their bite is said not to sting so severely as that of the culicines.

The majority are noisy and the bite hurts.

The larvae float head downward

at an angle to the water surface.

The larvae float horizontally.

Anophelines usually prefer clean water with some weed.

Culicines breed in any water.

The ova may be infected with Malaria and perhaps the resulting mosquito (Chalmers).

FEATURES COMMON TO BOTH TYPES OF MOSQUITO.

They usually bite at night.

The females alone suck blood.

The males being vegetarians.

Females are said to suck blood once a day in the natural state.

Females are said to be capable of travelling $\frac{1}{2}$ a mile when in search of water to lay their eggs.

Mosquitoes can hibernate during the cold and Aestivate during drought. In the Aestivating condition they bite and suck blood but lay no eggs.

The life period is probably in the female about a month but this will not include Aestivation or hibernation periods, which are "taken out of time."

Their natural enemies are—

Of the adult, Birds and Bats; of the larvæ, Fish and certain other larvæ as that of the dragon fly.

The larvæ can hibernate and perhaps the eggs also.

The small fish called "millions" or *Girardinus Poeciloides* and its allied species is said to be voracious in destroying larvae.

Certain plants are breeding places e.g. Pitcher plants, Bamboos bromelias, etc.

The distinctions between species are—from the layman's point of view—almost ridiculous in their fineness, questions of scales as shown microscopically on the head, the shape of the hinder part of the thorax, the distribution of the veins of the wings, the com-

parative length of the joints of the Antennae and the shapes of the feathers on the head are amongst other means of identification.

Professor Theobald gives a list of 20 known carriers of Malaria and three probable carriers.

The principal proved carriers in the F. M. S. are Nyssorrhynchus Maculatus described hitherto as N. Willmori (N. Willmori has never been found in this country I am informed).

Nyssorrhynchus Fuliginosus, hitherto confounded with N. Nivipes. Myzomia Albirostris *probably the main carrier in the F. M. S.* in which 100% were artificially infected by Dr. Stanton at the Medical Research Institute, Kuala Lumpur; it has also been found naturally infected and is very numerous here. Myzorrhynchus Umbrosus or Petagamia Umbrosus incriminated by Dr. Watson under the name of *Myzorrhinchus Umbrosus X.* has so far given negative results. Nyssomyzomia Ludlowii is a common carrier in the Andamans, is common here in seaports and in brackish water and is a possible carrier here.

Myzorrhynchus sinensis has been found naturally infected but gave negative results as a carrier of Malignant Malaria.*

The culicine which carries Yellow fever is Stogomyia calopus or fasojata. Dengue, Culex fatigans and Filariasis, culex fatigans also.

With regard to the stages of the insect there are 4.

1. The egg.
2. The larva.
3. The pupa.
4. The adult insect.

The eggs of the anopelins are laid in stars, rows or triangles.

The eggs of the Culex in Rafts or floats.

There is no evidence of the presence of malaria without the presence of some of the anophelines.

Where there are no anophelines there is no malaria.

The introduction of an anopheline has resulted in a heavy incidence of malaria in a subtropical country.

The duration of the egg stage is about 2 to 3 days but may be shorter in the tropics.

The eggs become larvæ or "wiggle waggles" in water and the duration of this stage varies somewhat with their food and temperature but may be taken as from 8 to 21 days.

The next stage is the pupa which lasts about 48 hours. The pupa splits and the adult emerges.

Measures Against Mosquitoes.

Under the heading "health data for house sites" I have laid down what I believe to be the rational methods to be adopted for anti-malarial drainage; in addition to this the following measures should be remembered.

* For further information see Report of D. I. M.R. in Government Gazette of II., X. 12

- a. The oiling of ponds with crude petroleum or "mosquito oil," the latter works out at 8d. a gallon and Mr. P. Russel is the F. M. S. agent at Kuala Lumpur.
- b. The prevention of sedge, grasses and weeds from growing by the sides of streams and ponds.
- c. The use of mosquito rooms in the evenings, and mosquito nets at night. The following points concerning the proper use of nets should be observed. The edges of the nets should not lie upon the floor but should be *inside* the frames; if frames are used: or hung on wires across the room, the curtain should be tucked in under the mattress, there should be *no door* in the curtain, it is a useless danger and the curtain can easily be freed to crawl in, and then tucked in again.
- d. Beds should be at least 4 feet wide and I should advise beds of 5 feet wide.
In narrow beds, the limbs frequently come against the curtain and the danger of infection is greatly increased.
- e. Incense, joss sticks, tobacco, etc., keep off mosquitoes and can be used with advantage. Incense under the dining table is useful if one does not object to the smell.
A powder (pyrethrum) if burnt or heated, kills or stupifies mosquitoes near it.
- f. Oils such as citronella and its various compounds may be applied to the exposed parts but they all evaporate quickly and should be reapplied.
- g. If the drainage round the house is perfect, undergrowth should be removed and an open space provided.
- h. Fill all pools, oil all ponds regularly, say every 10 days, divert and fill the beds of small streams or treat them in accordance with the "Simms" Panama system. Crude carbolic acid 1 in 16,000 or 1 ounce to 16 cubic feet kills Larvae and is suitable for pools (Wise. B. Guiana).
- k. Kitchens and back premises should be thoroughly inspected once a week.
- l. It is an economy to provide your household staff with mosquito curtains and Quinine.
- m. Jodolite or Solignum applied to woodwork and ceilings has been said to kill mosquitoes and should be tried.

Dysentery.

In my previous pamphlet "concerning the Medical Management of coolies in Malaya" written in 1906 I concluded that the origin of the majority of dysentery cases amongst labour forces was either Malarial or Bacillary, since that date I have had no reason to recant that statement.

Of the very large numbers of dysentery cases microscopically investigated by me since, at Klang hospital for 2 years (140 beds) and at the District Hospital, Kuala Lumpur (600 beds) for 2 years, I have come across few cases of Amoebic Dysentery.

Furthermore, liver abscess is so uncommon amongst the natives that I feel all the more convinced that the types mentioned are the main types.

I shall take the liberty of quoting the para. alluded to.

"I do not intend to deal exhaustively with this question, but I wish to impress the fact that I believe the vast majority of dysentery cases, as seen amongst coolies, have their origin either in malaria, or are of a bacillary nature and highly infectious, the impossibility of separating the two forms, from a layman's point of view, render a general rule necessary, that rule is: *Segregate all dysentery cases.*"

Bilharziosis, when it affects the rectum produces symptoms similar to dysentery; it is known, but uncommon here.

If the health of an estate is a matter of any importance, each dysentery case should be looked upon as if it were cholera, and isolated immediately on its appearance.

Without wishing to alarm my readers I quote here the most modern classification of the dysenteries as presented by Castellani and Chalmers, in order to give some idea of the dangers of looking upon dysentery generally as a single disease, easily diagnosed, or one which it is permissible to treat at the lines by "sending a dresser along" once daily.

Dysenteries are divided into:—

- A. Those caused by animal parasites.
 - 1. The Protozoal types.
 - 2. The Platyhelminthic type.
 - 3. The Nematelminthic type.
 - 4. The Arthropodic.
- B. The dysenteries caused by Bacteria.
- C. Pseudo Dysenteries.

The Protozoal type mentioned as No. 1 above is subdivided into—

- a. Entamoebic Dysentery.
- b. Laveranic Dysentery.
- c. Leishmanic Dysentery.
- d. Ciliar Dysentery.

All the types mentioned must be again placed under their headings as regards severity and duration, and the use of one instrument is imperative if the treatment is to be effective, namely the microscope.

The symptoms of each are closely similar at the commencement and may be said to consist in:—

- a. Looseness of the Bowels, followed after a varying period of time by the passage of mucous and blood.
- b. Straining at stool and extreme discomfort.
- c. Pain in the lower part of the abdomen.
- d. A coated tongue.
- e. Fever in the majority of types.
- f. Probably vomiting, and almost certainly nausea.

In all cases where dysentery is known to be occurring in the neighbourhood and seems to have found its way on to the estate, the Bacillary type should be suspected, and the greatest precaution should be taken to segregate the case promptly.

As a routine treatment a dose of castor-oil, with say 20 drops of chlorodyne, is the safest medicine to start on, and on arrival in hospital I am a believer in enemata of various drugs according to the predominating symptoms.

Attention should be paid to the Water Supply immediately a case of dysentery occurs on an Estate.

Diarrhoea.

Diarrhoea causes a large mortality and invaliding rate amongst coolies. I consider it to be chiefly due to one of four causes: 1. Bad water or water containing Mica or zinc; 2. Eating uncooked or stale rice; 3. Malaria; 4. Ptomaine poisoning, by which we understand the eating of food which has commenced to decompose.

As ptomaine poisoning diarrhoea is difficult of diagnosis, and the protraction of the illness very variable, and as it may be confused with other diseases (which I shall deal with below) I think that these cases ought to be segregated, many of them might be tubercular or typhoidal or choleraic in nature. The necessity of regular inspections of the food in the estate shop is a fairly obvious duty, and will help to prevent the ptomaine cases if all questionable articles are confiscated and destroyed.

With regard to No. 1 the Mica and zinc causation, both have occurred within my experience in this country.

Mica is of course a purely mechanical causative and the result would be the same if fine particles of glass were suspended in the water.

It occurs in places where river and stream supplies are in use and is most frequent where the stream or river passes over decomposing granite in its course.

I should say it is a rare factor in the causation of Diarrhoea and dysentery but it must be mentioned as when it does occur the whole labour force will probably be affected.

Zinc. I mention because the collection of drinking water off galvanised roofs is becoming more and more common as a means of water supply on flat land estates.

The dangers of zinc going into solution in water when vegetable matter is present in the water is much greater than is generally believed, and I must impress the necessity of frequent cleansing of all collecting tanks and the necessity of clearing, round the tank or roof which collects the water, in order that *no vegetable matter may be allowed to enter with the water*, nor to rest on the collecting roofs or gutters. Manholes in collecting tanks are usually made too small to enable thorough scrubbing of the inside and this point certainly requires attention.

Quite recently suspecting zinc as a cause of a case of acute Diarrhoea, I forwarded some water which had been stored in a zinc tank at the bungalow of an European Official to the Medical Institute for analysis.

I have no reason to think that the storage was unduly protracted nor that any circumstances rendered the tank more liable to vegetable agencies than any other of the tanks used for storage in the particular neighbourhood. It certainly was *not* exposed to the same risk which a tank at the lines in rubber would be, and yet the result of the analysis was .25 parts of zinc per 100,000. This seems very little, but if the 100,000 parts be taken as drops of water it is quite obvious that time, and the quantity of water consumed per day is all that is required to develop the poisoning.

Dr. Gimlette, now State Surgeon Kelantan, investigated (about the year 1900 I believe) an outbreak of diarrhoea amongst the M. S. Guides stationed at Kuala Lipis, Pahang, and found zinc in the drinking water to be a causative factor if not the specific cause of the outbreak.

Through the courtesy of the F. M. S. Government Chemist (Mr. Hill) I am enabled to quote below a test for the presence of zinc in water, and I trust Planters will protect themselves and their labour by investigation of such water supplies as are drawn from corrugated iron collecting areas. Although the test is somewhat complicated it should be possible for an European Physician to carry it out at the Estate Hospital.

ZINC TEST.

Mr. Hill writes:—

The only satisfactory method of determining zinc either quantitatively or qualitatively is the following:—

Measure out 1 litre of the water (or any other known volume) evaporate it down to dryness in a porcelain basin by pouring in fresh quantities at intervals. Add a little dilute hydrochloric acid (enough to dissolve the whole of the residue). Rinse out the contents of the basin with some of the water into a beaker. Add ammonia in slight excess and heat for a short time. Filter off the precipitate and wash it with a little more of the water, keeping the volume of the filtrate as small as possible. Add a little ammonium sulphide to the filtrate. If zinc be present a whitish precipitate will form on standing or warming.

To estimate the zinc quantitatively the pptd. sulphide must be redissolved and pptd. as hydroxide, which is then ignited and weighed as oxide.

2. Uncooked and stale rice.

With free labour I think the Tamil cooly is better fed at his lines than in the old days of the indentured immigrant.

Fewer women and dependants arrived formerly and the majority of the labour force were unmarried, the coolies also were I think less "settled down" than the free coolies and consequently more careless at their lines.

On heavy drain-cutting or earth-work coolies probably in many cases also worked overtime, and on returning to their lines tired, after heavy labour, there was more tendency to cook food imperfectly or even to eat raw rice than there now is.

Uncooked and imperfectly cooked rice is indigestible and will lead after a time to intestinal irritation which if undealt with will in all probability lead to diarrhoea and illness.

Stale rice, by which I mean the rice which has been properly cooked, but which from laziness is cooked in sufficient quantity at one time to last the whole day, is I consider another probable cause of intestinal disturbances.

I have frequently seen pots of rice cooked the night before left only partially covered during the day to be partaken of again the night following.

It is hard to imagine that such a procedure regarding the staple food stuff can be permissible or advisable amongst coolies, and although I am not prepared to state that fermentative changes occur in such circumstances, nor why stale rice should produce illness, I may be permitted to hold the view that such a food has been the cause of a certain amount of intestinal disease amongst labour forces.

3. Malaria beyond a doubt from what we know of the history of the parasite and its effects in different parts of the body, must be capable of producing disturbances of the circulation of the blood in the intestines, as well as in other positions and I have no doubt that Malarial Diarrhoea occurs as a separate disease. It will be advisable however to look into the water and food supplies of the estate when diarrhoea occurs over a number of coolies.

Quinine if there is "fever" amongst the coolies at the lines where the diarrhoea cases occur should be given daily, or even twice daily to all (grs: V will suffice) and if no improvement takes place in say 36 hours Hospital is the place for the sick.

When I mention 36 hours at the lines, I mean of course in cases unaccompanied by collapse or even by inability to work.

A general rule in matters of this kind will be useful, *when a cooly "goes down" he should be removed to Hospital.*

4. Ptomaine poisoning is usually rapid in its onset and has been taken for cholera. It is caused by poisons which develop in decomposing meat or vegetables and my advice

in such cases is *Treat it as cholera*, isolate the patient and send for your Doctor. Preliminary treatment, castor oil and chlorodyne and some stimulant if collapse be present.

Anchylostomiasis.

This disease, of which little is as yet known amongst laymen, has been of late years so threshed out pathologically, that it is now, to the tropical physician, an open book, writ large, and easy of diagnosis microscopically. The scourge of the West Indian planter at one time it will be one of the most serious diseases to be dealt with in this country, unless prompt precautions are taken with regard to its prevention and cure.

The microscopical examination of the faeces—which is I believe undertaken as a routine in the Dutch estate Hospitals is not as yet seriously undertaken in the estate hospitals of this country. Until this is adopted little progress can be expected in dealing with this disease on the estates where it occurs.

The disease in its fully developed stage exhibits the following symptoms: anæmia, swelling, diarrhœa, abdominal pains, muscular pains or pains in the joints, and lassitude, which may be remarked frequently as the first symptom.

The disease untreated frequently terminates fatally, but if the treatment be applied in time it is not very difficult to deal with, and the patient usually recovers. It is due to the action of a minute worm which lives in the upper part of the small intestine and sucks blood from the patient, eventually causing a deep anæmia or wateriness of the blood, which is followed by the symptoms enumerated above. The gravity of the disease is proportional to the number of worms present in the intestine,* and some poisoning by the worm is said to be present in the disease.

The parasite can enter the system either by the mouth in drinking water, or by the skin, and it causes much ill health and loss of work amongst coolies in infected areas.

The worm can live in moist earth for a considerable time, and many authorities believe that it can multiply outside the body.

The ova of the worm are voided in large numbers by sufferers from the disease and then undergo development into worms capable of infecting persons through the skin.

When the almost total absence of latrine accommodation for coolies is considered, together with the habits of the Tamil, and the fact that they work barefooted, the chance of a worm gaining admission into a human being must be regarded as “rosy.”

The treatment consisting as it does in the administration of somewhat dangerous drugs—namely, thymol, B. naphthol or eucalyptus and chloroform—I do not intend to deal with herein, but it may be useful to hospital dressers to remember that Thymol is soluble in the following: chloroform, oils, turpentine, alcohol, glycerine, and Ether (a useful mnemonic for these drugs is *cotage*), if they be

* The death rate from this disease at Porto Rico was placed at 30% of the total deaths.

administered to patients when thymol has been given poisoning follows.

While Medical Officer in charge of the Selangor Coast District March, 1908 to November, 1909 I carried out a research extending over 199 cases of Anchylostomiasis uncomplicated by malaria, i.e. a research in such cases of the disease as showed no enlargement of the spleen such as would have been present had the case been one primarily of malaria.

The drugs used were those mentioned and the results were as follows:—

Treatment.	Cases.	Deaths.	Deaths%	Stay in Hospital.
Thymol only	31	6	19.3	28.48 days
Thymol followed by B. Naphthol	3	1	33.3	127.6 „
B. Naphthol followed by Thymol	8	2	25	104.62 „
B. Naphthol only	47	7	14.8	38.89 „
Mixed	110	4	3.6	25.07 „
B. Naphthol + Thymol Grs: V of each in cachet. 3ce. daily for 3 days.				

Copied from the office copy as enclosed in H. O. S. No. 568/11.

A. S. JOSEPH, *Clerk.*

The prophylaxis of the disease is simple, but extremely difficult—if I may be permitted the bull—simple because it consists in either compelling coolies to wear shoes when at work, or in smearing their feet and legs with some sticky substance, before they go to work—any thick oily substance will serve the purpose. The prophylaxis is difficult because it is obviously a tedious process to prove to the native mind that such simple measures are necessary and effective for the preservation of their health. Latrines and a lines watchman are absolutely necessary to see that sanitary instructions are followed at the lines.

The idea of compelling all coolies to wear some form of foot gear presents a problem in labour management which is said by some to be insoluble. Whether the education of the future will produce coolies more amenable to management I cannot say, but I believe that certain Managers now in this country could get their labourers to wear anything they desired them to.

Debility.

One of the principal headings of disease under which a multitude of diseases are in reality included, it is a serious cause of invaliding and stoppage of work.

Debility is one of the diseases which will continue to appear in returns until the routine of microscopic examination of blood, etc. of cases is adopted more universally by the practitioners of this country.

That there exist cases which are not *easily* relegated to their proper heading I am, alas! only too ready to grant, but that in the majority of instances these cases *can* be separated I am equally

convinced. Amongst others, the following diseases are, I consider, largely responsible for "debility:" 1. Anchylostomiasis; 2. Malaria, perhaps; 3. Worms; 4. Starvation (due to improperly cooked food which cannot be digested); 5. Sprue; 6. Dum-Dum fever; 7. Relapsing fever; both of which are known to exist here.

Such cases cannot be separated without careful examination and scientific investigation, and the hospital is their proper place. The number of coolies who die annually of "debility" is at present much too high in estate hospitals, and to my mind reflects upon the class of dressers employed in estate hospitals and also reflects detrimentally upon the planter and upon the revenues of the country.

Ulcers.

That these cases which cause such an enormous number of hospital-cases amongst labour forces here, can be dealt with by similar methods to those quoted by me above for Anchylostomiasis, I have no doubt. The cause lies beyond question hidden in one word, *wounds*, whether caused by biting flies, the Anchylostoma, sugar-cane leaves, stoney ground, or what not, the original cause of ulcer amongst coolies is, I believe, a wound, and the method of their prevention is quite obvious namely protect the feet and ankles.

The only remedy failing protection by foot wear is daily inspection and attention by a person qualified to treat wounds and so prevent the development of ulcers. First aid treatment consists in thorough washing, cleaning with corrosive sublimate lotion 1-1000, dry the wound, apply a few grains of Iodoform and seal the wound with flexible collodion. The collodion can be repeated before the labourer goes to the field next morning.

The admissions for this disease in Krian district during 1905 amounted to 5,322 in a total labour force of approximately 7,200, and if the average number of days for which each case was in hospital be put at say 10, the total monetary loss to the estates must have been about \$14,000. During 1906, 3,617 cases were returned on a labour force of 7,135.

In Selangor during 1911, 2041* cases were returned from Estate Hospitals—this is equivalent at 10 days per case to \$6123.

Guinea worm.

This disease has been of frequent occurrence on some Estates, it occurs as the result of drinking dirty water infected with the worm itself in an immature state.

Hence it can be understood how some Estates produce many cases of the disease, whereas on others perhaps quite near at hand but with a protected or pure water supply, none are found.

The disease commences as a minute pimple or swelling usually on the foot or leg, a blister then forms which bursts and in the bottom of the small wound the worm is seen.

* Figures incomplete. Supplied by courtesy of Dr. MacClosky K.L.

The disease has been known from ancient times and it is supposed to have been the disease of "fiery serpents" in the time of Moses.

Sometimes shiverings and fever accompany the disease or a joint or joints may be affected, but usually there is only one worm and constitutional symptoms are not severe.

The prevention of the disease lies in the strict protection of the water supplies, and the boiling or sterilizing of all supplies on estates where the disease occurs.

The life of the worm in water is lived in the body of a minute water animal called cyclops, the length of life being about 4 weeks outside the cyclops, and about 41 days in its body.

The treatment consists in douching the affected part with cold water and also massage. The part should be kept clean. It is usual for natives to wind the protruding part of the worm round a small stick, but no tension should be put on the body of the worm which if it breaks may cause suppuration. The whole length of the worm comes out in about 2 to 3 weeks and the wound if protected from contamination usually heals rapidly.

The disease may readily be the starting point of a severe ulcer, and care should be taken to keep the small burrow of the worm clean until it has all come away.

The worm varies somewhat in length but thirty to sixty inches is the usual size by about 1/10" in breadth.

Other names for the disease are—

Dracunculosis or Dracontiasis.

Dum-Dum Fever (Kala Azar).

This disease undoubtedly does occur in imported Indians, but that it can arise or ever has risen *de novo* in this country, is not certain.

As I have already stated it may be confused with Anchylostomiasis, and some other debilitating diseases, the diagnosis can only be made microscopically, and considerable skill is necessary in the preparation of the specimen.

Bilharzia Disease.

Endemic in Africa, this disease has happily not invaded this country to any extent.

The symptoms affect either the bladder or the rectum, causing in either position a discharge of blood and mucus.

It may be confounded with dysentery when affecting the latter.

The accurate diagnosis can only be made microscopically and no first aid treatment is likely to be necessary.

In the event of severe bladder pain occurring, the general treatment of inflammation of that organ (irrespective of the cause), namely, a hot hip bath, and barley water to drink, should be kept in mind.

The disease is caused through bad drinking or bathing water.

Worms.

Many natives harbour intestinal parasites, the commonest being the round worm after the *Anchylostome*.

Tape worms occur but rarely in my experience, but of thread worms the same cannot be said.

Intestinal worms cause a marked amount of debility and frequently anæmia also.

The treatment of the tape worm is frequently a protracted procedure, as the head of the worm is not easy of expulsion, the treatment is ext. of male fern, or thymol, both of which drugs require careful handling.

The round worm is expelled by santonin, which drug—although it may cause yellow vision—should occupy in this country a position more akin to that occupied by quinine than it at present holds.

Despite the arbitrariness of the statement, I am of opinion that every coolie arriving in poor condition should have an ounce of castor oil shortly after his arrival, and 6 grains of santonin next morning. The question of the psychological moment for the administration of the drug, I leave to the intelligence of managers or hospital assistants; the ideal method would be to treat the whole new batch at once.

Thread Worms.

Thread worms will require injections for their removal and as they cause no actual invaliding do not cause any material effect upon the work of the estate. Filtration of or boiling of the drinking water is the proper preventive of these diseases.

WORM INFECTIONS GENERALLY.

We know from investigations carried out in the Government hospitals, and also on the estates, that the Tamil labour force of this country is infected by anchylostomiasis to the extent of 75 to 80% and that the other nationalities are also infected to a variable extent.

We know also that the vast majority of country-bred children suffer from round worms.

It is an established fact that these diseases act detrimentally upon the general health.

That when Anchylostomiasis becomes complicated by malaria a very serious condition is produced, and we know that intestinal worms of all kinds are comparatively easily dealt with.

I am inclined to believe that the time has arrived to deal with the question in a wholesale manner, and even as we do not select coolies for vaccination but vaccinate them en bloc, so I am of opinion that the routine treatment for intestinal parasites is not only advisable but necessary.

Whether it would be most advisable to deal with them (*a*) at the Indian Depot, (*b*) on the voyage, (*c*) in quarantine this end, or (*d*) to deal with each batch as it arrives on the estate, I must leave to the Planters Associations or Individual Managers to work out.

For my purpose the object would be as well effected in one place as the other, but I certainly consider that the Manager who omits to treat his new coolies on arrival is "asking for trouble" in the future.

On a large number of estates new coolies are segregated for some days after arrival and in such cases the treatment could very easily be carried out.

From the figures given of my investigation of Anchylostomiasis at Klang Hospital (page 29) it will be seen that the most successful treatment consisted in mixed Thymol and B. Naphthol, which in 110 cases treated only showed 3.6% of deaths from the disease. The doses used being V grains of each drug given in capsules twice a day for 3 days.

Alcohol should not be permitted during this treatment as it causes solution of the Thymol and symptoms of poisoning, but if the coolies can be guarded against this for their period under treatment it is certainly the most efficacious. The next best method and one which can be adopted if there is any doubt as to whether alcohol can be kept from the coolies or not is B. Naphthol in doses of X grains every day for 3 days the death rate from the disease under this treatment worked out at 14.8%.

The purgative to be used the evening before commencing is Salts, "white mixture," or salts and senna, *not oil* (see p. 28).

The case of children suffering with round worms is very easily dealt with, a suitable dose of castor oil at night, followed by 1 to 5 grains santonin next morning; according to the age; and this treatment repeated once weekly for 3 weeks will meet the case.

With regard to the rarer forms of intestinal parasites I do not think it necessary to deal with them here. Many are very difficult to deal with and bear such names as would cause the estate dresser "to have a fit," this little parasite for instance which occurs in the vermiform appendix.

Natural Order. Malacocotylea; sub order. Digenea.

Family. Paramhistomidae; genus. Gastrodiscus.

Species. Gastrodiscus hominus.

It will suffice therefore if I close this heading by alluding to the treatment of thread worms, a small worm which merely causes rectal irritation and which can be expelled by rectal injections of common salt, infusion of Quassia and water.

Elephantiasis, Chyluria and Varicose Glands.

The cause of all the above diseases which occur, but are not common in this country, is a blood worm.

The worm is transmitted by the bite of *Culex* mosquitoes so that our anti-malarial measures will help to prevent the diseases.

Elephantiasis is diagnosed by the swelling of a part, usually a leg or a foot; the swelling is hard and brawny, the skin usually wrinkled, and very coarse, the disease is usually uni-lateral and the affected part does not pit on pressure.

Chyluria, due to the *Filaria* also, consists in a milkiness of the urine.

Varicose glands usually occur in the groin, they are hard and painless and frequently grow to a large size.

All these diseases can only be diagnosed microscopically in their early stages and have little effect upon health until long established.

The majority of cases require the scalpel for their treatment.

Leprosy.

Unusual amongst coolies who have been medically examined, it is, nevertheless most important that the symptoms of this disease should receive all possible publicity, in the interests of the public health which is my excuse for presenting it.

Any thickening of the skin, circumscribed, and of a coppery red tinge, should be suspected. On Tamils they usually show as darkened patches.

Loss of feeling, even to sharp bodies, such as a pin, if it is found in a hardened patch of skin is very suspicious. Thickening of the nerves, for example an enlargement and hardness of the nerve at the inside of the elbow—"the funny-bone"—should lead one to examine for anæsthetic patches elsewhere.

Chronic ulcers of the feet, particularly of the sole of the foot, are almost invariably leprosy.

The physiognomy of a leper is quite distinctive to the trained eye, and when the seared, bull dog expression is present, cannot be mistaken.

Usually the first signs of leprosy to be noticed are seen over the cheek bones or on the back, the forearm is a fairly common site to first discover the disease and also the region above the eyebrows.

Two main divisions are described—the Macular and the Nodular.

The Nodular is accompanied by nodules in the skin and the Macular shows by slightly elevated darkened patches which look like a slight sear or burn which had not been severe enough to blister the skin. The wrinkles on the forehead appear deep, by reason of the thickening of the skin when the face is affected.

Irregular and usually slight attacks of fever occur early in leprosy, the later signs, such as the loss of fingers and toes and repulsive ulcerations of the body, are, mercifully, seldom seen save in the asylums provided for these unfortunate beings.

Abscess of the Liver.

The fever, emaciation and general illness preceding the full development of this disease are so variable and progressive, that its diagnosis is hardly a subject for this pamphlet.

Early operation is the secret of success, and all that I need mention about it will be a quotation from Sir PATRICK MANSON'S lectures at the London School of Tropical Medicine: "Whenever you find a progressive deterioration of health and vigour occurring,

accompanied by some fever and sweats, always suspect liver abscess."

Pain in the right side is frequently present; cough is also a common symptom, and an Alcoholic or Dysenteric History frequent.

Sprue.

I feel that a précis of sprue is a difficult task. Where tropical diarrhœa ends and sprue begins is not easy of definition, but if I were driven to a descriptive epigram, I would say, "sprue is a chronic deterioration of mucous membranes of unknown causation."

The symptoms may be represented by various combinations of or conglomerations of the following:—

Diarrhœa, sore tongue, ulceration of the mouth, abdominal pains, pain on swallowing, pale stools, gassy stools, loss of weight and energy, shrinkage of the liver. I consider sprue to be not uncommon amongst coolies in this country, but the difficulty of accurate diagnosis causes the majority of the cases to be returned as diarrhœa.

The treatment in the case of Europeans, which should be commenced very early, consists in "baby-foods" and milk, nourishing unseasoned dishes, such as freshly cooked minced chicken, fresh fish, eggs, rusks, and such like. I believe that if this treatment were adopted on the first appearance of symptoms of tropical diarrhœa or sore mouth, that many cases would not progress to sprue. Lactobacillin may be successful in early cases.

I may perhaps be pardoned for having digressed somewhat, and in some instances for having invaded the domain of the manager's illnesses rather than the coolies—as in the case of the treatment given above—but it would be advisable to send coolies suffering with such symptoms to Hospital, otherwise they may continue working with the disease active.

Burns and Scalds.

Considering the system of cooking food which coolies adopt it is certainly remarkable that so few cases of Burns or scalds are seen on the Estates. Deep or extensive burns or scalds are very fatal injuries, and cases of this nature should be despatched to hospital with great promptitude as the dangers of collapse are serious.

As a temporary measure on the Estate I think perhaps a dose of chlorodyne 30 drops, or 25 drops of Tincture of opium and the covering of the burnt surface with clean cloths soaked in olive oil, is about all that can be done to ease the patient in transit to Hospital.

In the case of children a drop of opium for every year of age is safe. Carron oil which is olive oil mixed with lime water, is the usual preparation applied to burns, but in an emergency any clean oil or ointment will suffice to soothe the part and to exclude the air.

Beri Beri.

Why this disease was omitted from my original Essay I cannot imagine save that in that essay I endeavoured to deal with Tamils only, to the exclusion of other nationalities, owing to the fact that at that time (1906) the labour question was rather mixed up with the question of indentured labour, and at that time also I was inspecting estates which employed indentured labour, whereas now Free Labour, the emancipated Tamil, contract Chinese and Javanese, are more frequently employed than indentured labour.

The Chinese—as we now know—have always been the nationality most liable to this disease Beri Beri, this for reasons which have now been clearly demonstrated. Dr. Leonard Braddon, F.R.C.S. was the first observer in this country to draw attention to the influence of Rice in the production of the disease.

His theory is laid down in his monumental book on the subject, entitled “Beri Beri its causation and cure.” Since the date of Dr. Braddon’s epoch making publication, the question has been seriously and scientifically taken up, materials analysed, and enquiries held into its exact cause by Drs. Stanton and Fraser of the Government Institute for Medical Research, Kuala Lumpur.

The present position as regards the disease may be briefly summed up as follows:—

In the polishing which occurs in the case of white (or “Siam Rice”) something is removed from the grain which prevents the occurrence of Beri Beri, if *it is not* removed by the polishing process.

The exact nature of the protective substance has not as yet been declared and it is to the Scientific Investigators we must leave the declaration in this case, giving due honour to Dr. Braddon for his extraordinary perspicacity in arguing out the case against Rice on general principles. As all coolies on an estate whether contractors coolies or otherwise, come under the definition of “labourers” in the Labour code, and as all of them are equally in the care of Managers of Estates, the question of the protection of labourers from this preventible disease must now be considered. In my essay on Beri Beri published in 1904 I have given a fairly complete statement of the various methods of treatment, of the dangers of the disease, and a table showing the differential diagnosis.

I propose—in view of the assistance which it may afford to Asst. Surgeons and Dressers—to append only the differential diagnosis, and a few brief notes on symptoms and treatment.

The principal diseases which Beri Beri has to be separated from are:—

1. Alcoholic Neuritis. 2. Arsenical Neuritis. 3. Lead poisoning. 4. Paralytic diseases such as Locomotor Ataxy, etc., etc. 5. Brights disease.

The initial symptoms are usually Dyspepsia, numbness of the legs and slight “dropped feet” i.e. inability to bend the foot upwards on the ankle.

In the fully developed disease there will be Paralysis of the legs, probably swelling of the feet and perhaps general swelling of the body with cardiac Palpitations, progressing eventually to a general paralysis involving the arms. The principal dangers are, from heart failure (sudden death), Paralysis of Respiration, intercurrent disease is serious.

The death rate is variable, being usually about 20% over any large number of cases.

From what has been said above it will be easily understood that the prevention of the disease, as we now understand it, is merely a matter of excluding white or polished rice from the diet of the labour force.

Many estates which keep their own estate shop have already forbidden the sale of polished rice, and all estates which can control its sale in this way should do so.

Pamphlets drawn up for the Selangor Government by the Health Office are published in different languages and will no doubt be supplied to Managers who apply for them. The question is one of overcoming prejudice and consequently will take time, but if white rice be abolished from Estate shops this will be a great step in the right direction. The best initial treatment is a purgative, and a stimulating mixture to keep the case going until arrival in Hospital and absolute rest and treatment can be carried out.

For further details I must refer to standard works or to my essay on the disease.*

Various other methods of preventing the introduction of this type of rice will no doubt suggest themselves, such as reporting to the District officers the shops which sell this rice in quantity, also reporting at the same time any cases of Beri Beri which have occurred on the estate.

It is to be regretted that international reasons appear to prevent the prohibition of importation, but doubtless when the millers of Siam and other countries realise the dangers of "polishing," the matter will arrange itself and the disease become a matter of history.

Burning Foot (Erythromelalgia Tropica).

This disease which was first described under its proper classification by the author in a paper published in The Dublin Journal of Medical Science in the year 1904 is the cause of a considerable number of "lost days." The patient complains at first of heat and a prickling sensation in the soles of the feet. This rapidly progresses and after about 7 days develops into pain and tenderness, which may cause great distress and render walking practically impossible.

In the acute form of the disease patients may be seen in a typical position whilst in the ward, the knees bent up against the abdomen and each foot being grasped with the hand of the same side.

* "Beri Beri its symptoms and symptomatic treatment." Kelly and Walsh, Singapore.

The duration of the disease is variable but it may last at least a month varying in intensity from day to day. The exact causation of the disease is not as yet clear but that it is due to an inflammation of the nerves supplying the sole of the foot is practically certain. In my original paper I ascribed it to Malaria and the rapid changes from extreme heat to cold, to which the coolly working barefoot is exposed at agricultural employment in the Tropics.

In the old "coffee days" the temperature of the earth between the bushes would have been say 130° F. during sunshine, and just under the bush itself in the shade, would probably be not more than 75° F. on an ordinary Tropical morning.

First aid treatment consists in soaking the feet in hot salt water, made by adding three or four ounces of salt to the bucket of hot water; this gives relief and can be repeated as often as desired.

Quinine should be given with iron and arsenic as the patients are usually coolies in poor condition and I consider cod liver oil would tend to improve the general condition.

During the very acute stage I believe Aspirin might give relief.

Anaemia.

My sole reason in using this heading is to be enabled to refer to the diseases which cause this symptom. In the tropics Anæmia both of Westerns and Easterns occurs somewhat frequently and in both the phenomenon is a sign of some blood destroying disease or parasite, but it should not be permitted to become the "dumping title" of diseases which possibly from lack of investigation physicians fail to classify.

The usual causes of Anæmia in the tropics are—1. Malaria. 2. Anchylostomiasis. 3. Deficiency of iron in the foods as compared with Western foods. 4. A disturbance of the digestive powers due to temperature and altered environment. 5. A lack of certain constituents in the diet which help as vehicles for iron in the blood, or assist in fixing it in the tissues. 6. Kala Azar (rare).

In common with "debility" Anæmia occupies a position in returns in the tropics which I consider unwarranted and somewhat misleading but with the increase of scientific investigation of disease the number of cases should rapidly diminish.

Snake bite and its treatment.

It is unfortunate that a polyvalent or universal serum against the bites of all varieties of snakes has not yet been discovered. A large number of curative sera are prepared, but each is only slightly effective against the poison of any poisonous snake other than the special reptile against which it was prepared.

The cobra is the most common poisonous snake met with in the F. M. S. and the serum best suited for its neutralisation is Calmettes which is said to retain its properties in the Tropics.

"Lamb's," Pure Naja Tripudians Meer serum, is also strongly antitoxic for cobra venom.

As it is hardly probable that stocks of sera will be kept on estates, it will be advisable to quote the general measures to be taken, trusting that the sufferers can be brought to some institution where sera are kept, in time to save life.

1. Apply a tight ligature above the bite; as however the circulation cannot be indefinitely stopped in this way it will be necessary after attempts have been made at neutralising the poison in the bite—by the methods described below—to relax the ligature for “a couple of seconds” every 5 minutes or so tightening it up again immediately.

The above procedure can be repeated until a period of 30 minutes has elapsed by which time we shall probably “know where we are.” If symptoms appear very slowly a favourable result may be expected.

2. Having applied the ligature, as rapidly after the bite as is possible, the next step is to open up the punctures caused by the fangs.

Cut round the punctures at a distance of say 1 inch with the sharpest instrument you can get, to a depth of say $\frac{1}{8}$ of an inch, and deepen the punctures themselves by cutting along the line of their direction and well down to the depths of each say $\frac{1}{2}$ to $\frac{3}{4}$ of an inch.

Before proceeding to cut however and *after the ligature has been safely applied*, a few seconds might perhaps be taken in order to *make sure that the snake was a cobra or a known venomous one*. In this one must be guided by the broad head of poisonous snakes and the long fangs.

3. Having cut the oval incision round the marks, and the straight incision down to the depths of each fang mark, thoroughly scrub the incisions with strong permagnate of Potash Solution (3%). If water is not obtainable to make the solution, rub the crystals into the wounds.

If the bite is on the head or body the incision and Permagnate application alone can be done, as, a ligature cannot be with advantage applied round the neck!

Thoroughly soak the wounds with the solution.

If you have fresh antivenene inject 100 cubic centimeters, into a vein for preference, to be repeated should symptoms of failing respiration or heart failure occur.

A healthy cobra may inject from 250 to 350 milligrammes of venom.

The minimum lethal dose is 15 to 17 milligrammes for a person weighing 60 to 70 kilogrammes (132 to 154 lbs.) 350 cubic centimeters of Antivenene will be required intravenously or 3500 subcutaneously, to neutralise such an injection of poison. If respiration appears to be ceasing artificial respiration as is carried out in drowning cases should be adopted.

Stimulants, and strychnine Hypodermically (1/10 gr. up to $\frac{1}{8}$ gr. in urgent cases are useful to keep the circulation going, but it is quite useless to "pour down" brandy or any stimulant in the wholesale manner which is popularly supposed to be the remedy for snake bite.

Stimulants are only useful for a definite purpose, i.e. when the circulation or respiration commences to fail. They are in no sense curative.

4. The subsequent treatment is that for wounds generally, hot boric compresses frequently applied, and eventual treatment of the wounds on general principles.

Sunburn.

This troublesome complaint occurs mostly amongst Chinese and is more common amongst mining coolies whose work takes them into water and out into the burning sun on opencast mines. Sometimes very severe, the appearance of the parts affected is similar to that of a scald, and unlikely to be mistaken for any other disease.

The treatment will be similar to that for burns, soothing ointments and rest.

Prickly Heat.

I mention this here more particularly for the benefit of the European staff on estates.

It may afford some relief to sufferers from the disease to know that it bears the name also of "Lichen Tropicus," "Sudamina Papulosa," "Miliaria Rubra," and that it is "A papulo-vesicular eruption with marked Pruritis" which you shouldn't scratch! The following procedure usually checks and frequently cures it—

- a. Avoid irritating, "heating" foods, curries, rich puddings, cakes and hot drinks such as tea, etc.
- b. Regulate the bowels by "kutnow" or other salines.
- c. Wear the coolest clothing and change immediately after work 3 or 4 times daily.

I consider the coolest clothing in the Tropics consists in a vest of cotton (which may be black or coloured for the prevention of the sun's actinic action) under a cotton or crepe or silk shirt but I do not recommend such clothing for hard work on an estate as chills may occur.

- d. Use an ounce or so of Condys Fluid or cyllin in the bath.
- e. See that the clothing is carefully washed with good soap in pure clean water. It would be an advantage to have the underclothing boiled I think.
- f. Reduce the amount of fluids drunk.
- g. Bathe frequently and after the bath cool off and dry the skin carefully.
- h. Apply one or other of the following treatments—
 Boracic Powder one ounce.
 Oxide of zinc powder 2 drams.
 Starch powder 2 ounces mix.

The powder should be dusted over all parts affected, after the careful drying.

The 2nd treatment is prescribed in Castellani and Chalmer's Book.

Apply freely several times daily a lotion of Salicylic acid
1 dram.

Rectified spirit 8 ounces.

When dry apply:—

Salicylic Acid	grains X.
Talc	One ounce.
Boric acid	One dram.
Starch	One ounce.

Scabies.

Commonly known as Itch, the disease is needlessly common especially amongst the lower types of Tamil labourers in the F. M. S.

Definitely known to be due to a small parasite it is propagated by neglect and dirt, neglect of the individuals by themselves their overseers, Kanganies, conductors and dressers, and the continuance of it is due to slackness on the part of the estate staff.

The disease is supposed to be only a skin disease, and so long as a cooly can work nobody seems to mind much, but there appears to be no reason why these parasites should not be eventually found to carry disease.

The difference which diseases such as this makes between labour forces which are well cared for and those neglected, is not alone the obvious difference which can be seen by the clean dark brown skin of the healthy happy Tamil, but these "dirt diseases" carry in their train discontent, bad work, and eventually invaliding and loss of money to the employer; probably they tend to produce on the repatriation of the broken down coolies an active agent in his village against further recruiting.

The disease consists of itchy spots which show usually greyish on the dark skin. The skin itself is usually drier than usual. The parts where the disease is most commonly found are the hands and wrists, the clefts between the fingers, the folds near the arm-pits and buttocks, but it may extend to the body generally and legs.

Constant scratching to relieve the irritation is indulged in, and in cases where the disease is extensive I have no doubt that some mental depression occurs.

The treatment is simple and consists in—

- a. Scrubbing the parts with soap and hot water.
- b. The application of an alcoholic lotion or plain spirit.
- c. The rubbing-in of creasote and sulphur ointment daily.

The bed boards of the room should be scrubbed or scalded, clothing boiled in water—if old burnt, and the floors and walls sluiced with a strong carbolic disinfectant, jeyes in double strength, or spray of formalin, if it can be obtained at the estate Hospital.

Scabies or Itch must not be confused with cooly Itch, an inflammation of the skin chiefly affecting the feet, and also known as ground Itch, which is due frequently to the entrance through the skin of the *Anchylostome*.

Boils.

Boils are a common source of discomfort in the East and are no doubt due in many cases to an inflammation of the sweat glands in the skin and a subsequent infection by scratching in the early irritative stage. Errors of diet such as surfeits of mangoes, durian, or "stengahs" all probably predispose to their irruption.

In severe cases where they are multiple, the best treatment will be by vaccine prepared from the *Bacteria* found to be present in each individual case. Much can be done however without resorting to these radical modern methods, by change of food, change of air, or simple abortive measures which can be carried out anywhere. Boils can frequently be "nipped in the bud" by carbolic acid, the manner of applying it being by means of a small pointed stick which should be dipped into the acid, and then drilled into the centre of the commencing boil. The carbolic acid used pure has a deadening effect and the operation gives practically no pain. As a preventive, Castellain and Chalmers recommend the use of a Salicylic acid—Methylated spirit lotion, strength about 1-2% to be used daily after the bath, on the parts usually affected, or where pimples appear.

Dusting powders of boracic acid half an ounce and zinc oxide 1 dram may be found useful after the application of the lotion.

Urinary Diseases.

As far as my experience takes me in the past 16 years the diseases included usually under this heading affect to a much greater extent the Javanese than any other class or nationality of labour.

In the F. M. S. Stone in the Bladder and kidney diseases are rare, and the diseases to be dealt with may be almost confined to two. In both diseases the sufferers should be brought to hospital immediately but in the more ordinary of the two considerable pain on micturition may call for first aid treatment.

Pain in the region of the bladder and in Urethral diseases generally is severe and must be dealt with, the first aid measures in such cases should be—

- a. A Hot hip bath.
- b. Copious draughts of water 2 or 3 times a day, rendered alkaline by the addition of 20 grains of Bicarbonate of Potash or Bicarbonate of Soda to the pint of water or of soda water.
- c. A "mixture" contain Tr: Hyoseyamus and soda Bicarbonate with infusion of Buchu.
- d. Rest in bed, preferably in a properly appointed hospital.

There is no necessity to deal with the general and protracted treatment of these diseases here and the above treatment will give relief pending Medical attention.

Dhobie Itch.

It is a lamentable fact that almost every member of an European community in the Far East seems fated to "go through" this disease as children do Measels or Whooping cough.

The cause of the disease is now known to be a fungus or rather a variety of fungi of one species the *Epidermophyton*.

The name Dhobie Itch is very probably properly applied, as persons who wear underclothing washed at home in clear water and with good soap usually remain free from it.

It seems probable that the fungus only occurs in cases where the clothing has been washed in stagnant pools or dirty river water, or when the clothing is mixed with infected clothing; it is highly contagious.

In the text books on this troublesome subject sufficient stress is not laid I consider on the commencing signs of the disease, and the simple methods of aborting it.

The disease affects the crutch and inner parts of the thighs, it may affect the armpits or spread to the body, but the usual position is the first mentioned.

It commences as an itchy pimple or pimples, of a deep red color. If the infection be a severe one the disease appears to commence at several points at the same time, and if undealt with it progresses rapidly and in 2 or 3 days the fully developed excessively irritating disease is seen as a patch of deep red with a festooned or "scalloped" margin which is usually redder than the inner parts of the patch.

Neglect at this stage may lead to abrasion of the surface and the production of an eczematous condition which may prevent the patient from walking and even necessitate lying up in bed. With regard to the abortive treatment I can safely say that if the spots are noticed before they have time to spread, Eau de cologne, methylated spirit or Liniment of Iodine applied twice daily directly on the place will cure it.

The Eau de Cologne or spirit should be well rubbed in until a little soreness and smarting occurs, but should be confined to the actual area affected and not indiscriminately applied to the general surface.

The Liniment Iodine can be applied on a small piece of wool wrapped round a match; two days, or four applications usually suffice.

In the case of more extensive infections or where the above treatment has failed to effect abortion of the disease, it will be necessary to resort to chrysarobin ointment.

Goa powder ointment or chrysarobin ointment, is used at a strength of from 2-5%. *It stains clothing a deep brown, and if not intelligently applied will cause a severe inflammation.*

The routine which I usually adopted was chrysarobin ointment at night, carbolic soft soap and copious sluicing with water in the morning, followed by the application of 1-500 corrosive lotion which should be allowed to dry on the skin.

When signs of inflammation occurred, the ointment to be stopped, the lotion continued, and a Boracic and zinc powder applied frequently during the day to soothe the part.

All khaki and white trousers should be placed in boiling water when changed, before returning them to the dhobie.

In some cases the disease seems to become persistent or unamenable to treatment, and in these cases if it can be arranged, the greatest adjuvant to treatment will be the cool air of a hill station.

Hydrophobia.

A word or two about this shocking disease may not come amiss here. The disease is caused by the contact of the saliva of a rabid animal with a wound on another animal (man included).

It usually occurs as the result of the bite of any animal suffering from rabies, and is now said to be due to a parasite the *Neurocytes Hydrophobiae*.

The first symptoms of the disease in the dog (which is the commonest domestic animal affected) are: 1. A change in temperament; 2. Restlessness.

The stages of the disease have been divided as follows:—

1. The premonitory or melancholic.
2. The irritative or maniacal.
3. The Paralytic.

In the first, as I have stated, the dog's general behaviour alters, if a lively individual usually, he becomes morose, inclined to snap, and to hide himself; as this stage progresses he is often observed to chew sticks, to eat pieces of stone, etc.

He then becomes "mad," symptoms of choking, spasms, or fits, take place, panting, difficulty of breathing, vomiting, and cough occur, he may run away from home, and sometimes they travel great distances; at this stage the diagnosis is generally easily made.

The last stage is paralysis, his jaw drops, he can no longer swallow, his back becomes paralysed, and the unfortunate animal dies, either in a convulsion or quite suddenly.

The measures to be taken if one be bitten, or a wound of the skin come in contact with the saliva of such an animal, are: 1. Apply a tight ligature above the position of the bite if possible, this will need to be released somewhat from time to time say every $\frac{1}{4}$ hour to permit of the re-establishment of circulation; 2. Burn the bite itself with a hot iron; or apply carbolic acid. The ligation should be retained in position for about three hours. The incubation period from the bite or contact, to the development of hydrophobia is variable, but may be set down at from 4 weeks to 16.

Suspected dogs and other animals should be firmly tied up and kept under observation, or they may be killed by shooting them in the body. All uncared for animals should be shot, for an area of about 10 miles round the focus of the disease.

In the unfortunate event of one being bitten by an animal doubtfully mad, the patient should be sent to Saigon or one of the Indian Pasteur Institutes.

Through the courtesy of Dr. W. Fletcher, Government Pathologist F. M. S., I am enabled to quote this Circular issued by the Pasteur Institute Coonoor.

Circular:—

It is possible to make a diagnosis of rabies by a microscopic examination of the brain of the affected animal within a few days; formerly the only method available was to inoculate an animal from the suspected brain and wait for rabies to develop, which takes from 10 to 60 days.

The importance of early diagnosis from the point of view of persons bitten is evident.

2. In order to facilitate the microscopic examination of brains they should be fixed, while fresh, in a solution made up in the following proportions:—

Bichromate of potassium	3 grammes
Glacial acetic acid	5 cubic centimetres
Water (distilled preferred)	95 " "

or, stated in other terms,

Bichromate of potassium	45 grains
Glacial acetic acid	1½ fluid drams
Water (distilled preferred)	3¼ fluid ounces

and despatched the same day to the Institute for Medical Research, Kuala Lumpur.

The parts of the nervous system of greatest value are, in order of merit, the hippocampus major, the cerebellum, the cortex, the medulla and the spinal cord.

3. Brains preserved in alcohol do not give reliable preparations for the microscopic examination.

4. The microscope occasionally fails, so then the animal test must be resorted to. If the latter is to be successful a small portion of the fresh brain of the animal must be put at once into 50 per cent. glycerine. Alcohol and also the bichromate fixative mentioned above, destroy the virus, so inoculation of an animal cannot be performed with such material.

5. In removing the brain of a rabid animal, great care must be taken not to touch any part with the naked fingers for fear of infection. Instruments must always be used.

6. To remove the brain of a dog the simplest way is to fracture the skull with a hammer through the unbroken skin; then cut through the skin and remove the fragments of bone with bone and dissecting forceps. Having exposed the brain cut off a piece of the cortex with a sterile knife and put it with sterile forceps into a small wide-mouthed bottle containing 50 per cent. glycerine and

cork it tightly. The bottle should be surrounded with saw dust or dry grass or cotton wool and packed in a tin or wooden box. The remainder of the brain should be extracted whole from the skull and divided longitudinally with a knife and put into a wide-mouthed bottle containing the bichromate fixative.

No antiseptics must be allowed to come into contact with the brain during the process of its removal.

7. The quantity of fixative should be at least 20 times the bulk of the tissue put in it.

8. The bottle used should be filled right up to the stopper with the fluid, otherwise the brain substance becomes entirely broken up in the post.

Dr. Fletcher adds "the most rapid method of diagnosis is accomplished by squashing out a small piece of the Hippocampus between a cover slip and slide and examining unstained for Negri bodies.

Phthisis.

Consumption is an infectious disease; it is excessively common in this country. The disease is insidious and occurs in many forms, affections of the lungs being perhaps the most common, but the disease when it attacks the intestines is very fatal, the intestinal organs are susceptible, and I have had ample post-mortem proof of its occurrence here in this situation. Careful examination of coolies suffering from chronic cough is most advisable, and the examination should be carried out microscopically in order that no mistake can arise. In the future the Government will, I have no doubt, erect consumption sanatoria, but for the present I consider that when a coolie is found to be suffering from this dread disease, that he should be immediately repatriated, as the cheapest and best method of preserving the health of those who must associate with him in his work and in the lines while in this country.

Dengue.

This disease is an exceedingly sudden, and extremely infectious fever, it is marked by severe pains in the bones and joints, a rash usually appears, but in this country is rather fickle in its appearance. In the early stage of the fever it occurs as a simple redness of the general body surface, which is hard to demonstrate on dark skins. The pain in the joints and bones is frequently very serious, and the disease has hence acquired the name of "break-bone" fever. It almost invariably occurs in epidemic form, and rapidly spreads; it may be "seen coming" and advances from the neighbouring towns rapidly, when it has once declared itself.

The disease is transmitted by a mosquito *Culex fatigans* and it is due to some very minute organism which develops in the mosquito in the course of about three days 16 hours (Chalmers). The incubation of the disease in the human being after being bitten by an infected mosquito, is from 3 to 6 days.

As stated above the disease is usually sudden, but general symptoms such as fatigue and chilliness or slight shivering may usher it in.

The pulse varies directly as the temperature and progresses to 90 or 120 per minute as the temperature rises to 103 or even 106.

Movements of joints by the patients cause pain but if a joint be passively moved, i.e. by another person, the pain frequently does not occur.

Loss of appetite, nausea, vomiting, and marked diarrhœa or constipation are not uncommon.

On the third day the temperature falls; perhaps to normal; and there may be bleeding at the nose or from other parts, sweating, diarrhœa or other signs of "crisis."

The interval or remission lasts from the third to the 5th day, when the *second attack* commences with a rise of temperature and the appearance of the rash.

The rash commences on the palms and backs of the hands and rapidly spreads to the arms body and legs. It consists of slightly elevated, circular, reddish brown, spots, about half an inch in diameter, which eventually coalesce to form plates of red. In the F. M. S. it is said that the temperature falls with the appearance of the rash.

The second attack usually lasts a day and the temperature falls suddenly.

The skin eruption continues.

Peeling continues from 2 weeks to even 8 weeks.

The diagnosis from malaria is easily made microscopically.

From measles by the catarrhal symptoms of the latter.

From Influenza by the dengue rash and Influenza usually presenting catarrhal symptoms also.

The mortality is nil, 1 death occurred in 1000 cases in Australia.

The treatment consists in treating the most urgent symptoms, the pains with dovers powder, Aspirin, etc., etc.

The fever with cool sponging.

The bowels should be attended to, low diet given, stimulants are not desirable.

The prevention of the disease consists in the protection against the carrying mosquito (see mosquito measures).

Influenza.

As the vast majority of us have had personal experience of this disease, I shall merely draw attention to the leading symptoms once more to remind those who have suffered of their miserable time, and to claim kindness, or at least consideration, for coolies who become affected by it; sneezing, cold in the head with fever, pain in the back, rheumatic pains all over, general miserableness. Quinine and salicylate of soda are useful drugs in the disease, but it must not be trifled with nor neglected.

Measles.

The rash comes out on the fourth day of fever, it is well defined, and the "running at the eyes" usually helps to diagnosis. Exposure must be avoided, as pneumonia is a rather frequent complication. Measles, influenza, and dengue are easily confused, but if the planter will look about him he will frequently find assistance from the fact of certain diseases existing in the vicinity.

Lung diseases.

Having dealt with Phthisis under a separate heading the commonest remaining diseases will be Pneumonia, Pleurisy, Bronchitis and Asthma. Pleurisy is not strictly speaking a disease of the lungs but I think it permissible to deal with it here as such, owing to the symptoms which from a layman's point of view appear to affect the lungs.

Pneumonia. The most serious, is an acute disease accompanied by fever and prostration, with a high death rate—especially amongst Tamils.

It is caused or brought about by a chill usually, and I consider that on Estates it is frequently an indication of a hard drinking lot of coolies, and points to the advisability of regulating or closing the nearest gin shop.

The mortality from the disease varies directly as the consumption of alcohol over the point of moderation, both West and East.

The symptoms are cough of a persistent type, usually known as "hacking," Fever, Rapidity of the respirations—which in health should be about 16 to the minute—probably some pain in the chest and about the second day prostration and an expectoration of a brick red colour.

First aid consists in a carbonate of ammonia cough mixture, warmth, protection from further chill, and rapid removal to Hospital.

Pleurisy. Usually occurs as a concomitant of consumption pneumonia or bronchitis, cough is persistent and there is usually some temperature early in the disease, pain of a stabbing nature is always present either under the shoulder blade or below the breast. The treatment in the 1st instance will be a soothing cough mixture such as Syrup of Squill with small doses of Liquor morphia say 5 drops per dose. Warmth to the body and early removal to Hospital.

Bronchitis. The ordinary bronchitis met with on Estates is simply due to a neglected cold. The cough is loud and comes on in paroxysms, that is to say it is not usually a persistent cough with each breath, but "fits for coughing" occur and are accompanied by a considerable amount of expectoration. Fever is usually not present and in the ordinary case the patient can go about his work, all that is necessary being an expectorant mixture. Should the disease progress and fever occur, the cooly should be sent to hospital as pneumonia or pleurisy may step in, which if neglected may cost the Estate a valuable labourer.

Asthma. A very distressing complaint in which the patient suffers from attacks of difficulty of breathing and much wheezing in the chest.

It incapacitates a labourer and I am of opinion that if the disease has been acquired in this country repatriation is the most satisfactory solution from the Managers point of view.

It is not reasonable to suggest that labourers suffering from the disease in its chronic form should be supplied with hemp or stramonium cigarettes, which give relief in the disease, and if Asthma cases do not get well on ordinary hospital treatment repatriation is advisable as the case may get well in his native land.

It is not infectious and if the constitutional disturbance is not sufficient to prevent work this is one of the few diseases which might reasonably be treated at the lines by the Estate dresser.

The judicious use of saline purgatives and a mixture of *Iodide* of potassium frequently enable the patient to get on with his work until his savings are sufficient to take him to India.

Infectious Diseases.

I have already laid down the advisability of isolating cases of dysentery, diarrhoea, anchylostomiasis, and other intestinal diseases, the necessity in infectious cases—strictly such—is absolute, and if it be remembered that in the case of cholera alone, the disease frequently commences as a simple diarrhoea, the expediency is obvious. Of epidemic disease affecting bodies of coolies the principal will, of course, be small-pox, cholera, chicken-pox, influenza, measles, dengue, plague, and to a minor extent enteric fever. The majority of these diseases can be seen coming, and arrangements made for the isolation of cases directly they occur; the estate should establish quarantine against infected areas in the vicinity, and every endeavour should be made to prevent coolies visiting such infected areas.

Small-pox.

The incubation of the disease is about 13 days, during this time the patient feels quite well.

Fever starts with shivering, and sweating, and frequently vomiting, children often have convulsions, pain in the back is severe. On the 3rd day of fever the eruption appears, in appearance like pimples, and with a shotty, hard feel to the touch usually on the head, face and neck first.

The pimples next vesiculate and matter forms; this period marks the commencement of the secondary fever, and occurs about the 8th day. The secondary fever is severe, and about the 14th day the patient becomes most offensive, and may be quite unrecognisable. Delay in the appearance of the eruption is a favourable sign. The rash comes out all at once, in contradistinction to chicken-pox which occurs in crops.

The infection lasts until all the crusts have fallen. Careful disinfection of the hands, and of all material which has come in contact with the patient is imperative.

Attendants upon the sick should be chosen from amongst those who have already had the disease, or who have good vaccination marks, and they should be revaccinated before they commence to attend on the patient. Strict quarantine for 14 days after the death or recovery of the last case is necessary.

The best form of temporary isolation hospital—and the cheapest—is a shed of attaps, bound to iron supports, the floor should be cemented if possible or rammed hard, and the “atap sides” burnt when the epidemic is at an end. In the F. M. S. “Kajangs” are used and make a suitable camp.

Vaccination can usually be arranged for free in the F. M. S. and Lymph is always supplied by Government free when the stock is sufficient to meet the outside demand.

Vaccination of labour forces should be carried out when small-pox is epidemic in the country or when an outbreak occurs on a neighbouring estate.

Owing to the protection afforded by vaccination the disease has lost all its terrors, and the occurrence of severe cases in vaccinated coolies is unknown, mild cases of modified small-pox occasionally occur in the persons of labourers whose original vaccination was not efficiently performed or in whom the period since vaccination has been long, but these cases although they *must be isolated* to prevent the chances of spreading the acute disease rarely succumb.

It can be arranged and has been satisfactorily arranged that the contacts of an infectious case or cases, continue their daily work in a gang which is unpermitted to mix with other gangs, and they retire after work to the contact shed and not to the lines.

Measures for disinfection are given below (page 54). In the case of this disease they consist chiefly in

- a. Isolation of the case.
- b. Segregation of contacts.
- c. Opening up the room to sunlight.
- d. Washing down the room with lime.
- e. Vaccination of the contacts first, and the revaccination of the rest of the labour on the estate.

Chicken-pox.

The rash comes out on the first day of the fever, all the symptoms are less severe than small-pox, and the eruption comes out in crops. The feel of the pimple is not so hard as those of small-pox. Suppuration occurs in the pimples just as in small-pox, but the two diseases are really unlikely to be confused as the constitutional disturbance is much less in chicken-pox.

Isolate the case and contacts on the estate until a definite diagnosis is established.

Bubonic Plague.

Perhaps the first remark to be made upon this disease to the layman is, that there need not necessarily be any buboes, and indeed the most serious cases show no external sign of the terrible affection. As is now well known, the form from which the disease obtained its name was the bubonic form, in which swellings of the glands in various parts of the body do exist (groins, neck, armpits). This form of the disease—given the fact that cases have been occurring in the neighbourhood—is at least easy to suspect, and the extreme depression and very acute fever, lead one to isolate the case promptly, but the cases which I wish to put you on your guard against are, the *pneumonic* and the *septicaemic* forms; these occur with some frequency in all epidemics, and I think that perhaps the safest dictum I can give you as a working and standing order is this, “isolate all cases of high fever which is accompanied by “marked depression, or giddiness, or constant cough, or enlarged glands and try not to mistake a plague case for a drunken coolie.” The symptoms frequently resemble each other, but the severe fever must settle the diagnosis for you. The diagnosis should be confirmed microscopically from the gland juice.

The incubation is laid down at three to eight days, but instances in which infection has occurred from clothing, and after months, have been observed. Initial symptoms are shivering followed by severe fever, headache, vomiting, unsteady gait, depression, enlargement of some of the glands (if of the bubonic type).

Little children usually succumb.

Plague patients are said by some to be infectious for about one month after recovery.

Rats are known to disseminate plague.

Infections may take place through wounds and scratches, and also through the bites of insects, e.g., rat-fleas, bugs, and perhaps mosquitoes. I consider the last unlikely.

The excreta and sputum are infective.

Attendants upon plague cases should wear shoes and putties (or gaiters) and gloves which can be made of khaki without fingers.

The gloves should reach to the elbow where they can be tied with tape.

Plague can usually be seen coming even as cholera can. And the reports of cases from countries near, or even from distant countries which are connected by a large trade with the place we live in, should put us on our guard against it.

Only a small number of estates in the F. M. S. are directly concerned with the importation of Plague by sea or river, but for the benefit of these I would lay down the following measures to be taken calling them:—

“PLAGUE PRECEPTS.”

On the receipt of information of the existence of Plague at the ports or places which are connected with the estate by trade in supplies, etc.:—

1. Arrange for the estate dresser or visiting Practitioner to inspect the passengers and crew of vessels calling before they are permitted to enter the estate.
2. Report to the nearest Government Office (Police or Medical) that you purpose examining the vessels, and ask for instructions re suspects, meantime placing them in quarantine on the estate.
3. Any Estate "go-down" at the landing stage should be cleared of rats as effectively as possible, e.g. Rat hunts, putting cats there at nights, and by laying rat poisons, detail a few coolies especially to kill Rats and to bury any dead rats found.
4. If any dead rats have been found at the store *before these measures* were taken the fact should be immediately reported to the nearest Government Medical Officer who will no doubt take measures to have them pathologically examined for Plague.
5. Should a case or cases occur in human beings or rats, do not relax the anti-rat measures for at least 2 months.
6. When vessels tie up to the wharf, use tin cable protectors to prevent rats coming ashore.

All these measures seem irksome but every measure which tends to block any path of entrance of Plague to an estate, and the country generally, is well worth taking some trouble about.

Haffkines Anti-plague serum has been favourably reported upon as a protective measure and should be used if the disease tends to become epidemic.

Cholera.

Frequently commences as a simple painless diarrhœa, but may start very suddenly during the night. The diagnosis—in the event of cholera existing in the vicinity—of all cases of diarrhœa must be guarded, and when under such circumstances such cases occur, isolation, prompt and efficient is strongly to be recommended.

The next stage is one of collapse from which many cases never recover; the motions at this period become like rice-water, cramps occur, and no doubt about the diagnosis usually remains, more especially if the disease has been reported from the nearest town or village.

The vehicle of infection is usually WATER, milk, and contaminated food, clothing also being at times responsible.

I found, however, when dealing with the disease in Pahang in the year 1901, that a grave suspicion fell upon the river fish, and whether "post hoc" or "propter hoc" the disease certainly abated rapidly when I got the "kathis" to place the river fish under a "pantang," thus preventing their use as food.

During the stage of collapse stimulants are indicated by the mouth (if retained) or by hypodermic medication, the application of heat, mustard plasters and such like remedies also assist.

Contact with the discharges may be avoided, and disinfection carried out thoroughly if such contact occur.

The vomited material, the urine, and saliva are infective, and of course the motions.

The most prompt isolation of all diarrhœa cases in the event of cholera being present in the district is necessary.

If possible, *change the water supply at once*, examine the food supply and milk supply, and destroy all articles of doubtful virtue on the estate or works at once.

Thorough disinfection of all clothing (if it be not possible to burn it) is imperative.

Quarantine should extend to 20 days unless the medical officer relaxes this rule for good reasons.

Cyllin is said to be the best disinfectant.

All wells should be submitted to the permanganate process (see above) which is highly praised, but I personally prefer to rely upon boiling.

Vomiting is usually severe in cholera cases and is usually a pale watery fluid. The appearance of a cholera patient is most typical, the hollows round the eyes, the dazed or hunted appearance, taken together with loss of voice, coldness of the extremities, a feeble pulse, deep collapse, and the "washerwoman" appearance of the hands all lead one rapidly to the correct diagnosis.

The treatment of the sick in my opinion resolves itself into a question of staff, depending as I believe upon frequent injections of Saline Solution intravenously, or subcutaneously and constant nursing. With regard to the drugs, draughts every hour of Permanganate of Potash in water V grs. to the Pint is strongly recommended by Rogers, 2 gr. Potash Permanganate Pills are given every 2 hours.

Perhaps the best and simplest drugs to administer in the first instance are castor oil, chlorodyne, and brandy (half an ounce of the oil, 25 drops of the chlorodyne, and about one ounce of brandy). Eucalyptus oil has lately been highly spoken of. I have myself found a strongly carminative mixture containing Liq: Hydrarg Perchlor useful. Calomel acted well in the Krian epidemic, gr. 1 every hour, but I consider it requires careful watching. Haffkines cholera vaccine should be given a trial, it has been well spoken of.

Quarantine infected houses, lines, and towns.

The most satisfactory method of dealing with infected houses is of course to burn them: if impracticable, then disinfect them thoroughly with 1-500 corrosive sublimate *or* lime wash. During the Pahang epidemic the D. O. (Mr. MASON) and I burnt 2 houses in which cases occurred within two miles of Raub town, and I believe that action had much to do with the fact that Raub remained clear.

Although burning is radical and sound as a method of dealing with infected lines it should not be contemplated—in the case of good lines or buildings—except when other methods fail to check the spread of the disease, and in so far as coolies do not eat their

lines! I believe that the cause will usually be found in a well or drain water or some article of diet rather than to be actually connected with the lines.

In the Jin Heng estate epidemic in Krian my procedure was as follows: pull down half the roof of the room to admit the sunshine, pull down the front of the room in which the case occurred, these materials were burnt, the room, benches, walls and posts were lime washed. The persons living in the room were treated as contacts and isolated. The room on each side of the infected room was opened up to the sun also and limewashed, the inmates being removed to another place, but they were only observed and not treated as contacts unless they had "messed" with the case.

All coolies washed their hands in 1 to 1000 corrosive sublimate before each meal; this was certainly carried out.

All padi brought from Province Wellesley was burnt and any suspected clothing also.

All drinking water was boiled.

About 80 cases occurred with a death rate of about 50%.

All excreta must be either burnt or buried and the dead cremated or buried with about 50 lbs. of lime round the body.

Contacts must be also isolated, and they should all be given some acid mixture thrice daily in order to keep the stomach acid.

Measures to be taken upon the Outbreak of Cholera, Plague, or Small-pox.

1. Form bearer, burial, and sanitary companies, equip with stretchers, etc., treat all these as contacts, their clothing to be carefully rinsed in 1 in 500 corrosive daily, and their hands before each meal.

2. On the discovery of a case, bearer company will remove patient to hospital, medical officer will remain to see the "kuchie" opened to the sunlight, and the room either completely limewashed or scrubbed with 1 in 500 corrosive sublimate.

3. When the washing gang are started the names of the contacts should be taken, they should be sent to the contact shed. Frequent roll calls of contacts are essential.

4. During the progress of 2 and 3 above, the patient's clothes may be boiled or burnt, all his utensils destroyed or boiled.

5. If the disease shows any tendency to spread, tubs of 1 in 500 corrosive, 1 to each 50 coolies must be set up and the clothes of everyone in the lines steeped therein for 12 hours.

6. All utensils of *all coolies* should be boiled if the disease progresses.

7. *All wells must be closed*, and a sound, fresh water supply arranged for (this in the case of cholera only).

8. All coolies must rinse their hands in a solution of 1 in 500 corrosive before meals.

9. Change the bathing places if possible.

10. Limewash or corrosive wash all benches in the rooms nearby.

11. In the case of small-pox universal vaccination.
12. In the case of plague, plague vaccination and disinfection as above.
13. The dead should be either cremated or the bodies buried with about 50 lbs. of lime over the body, quick lime if obtainable will be advisable.

Yellow Fever.

An acute fever not contagious but spread by a mosquito *Stegomyia calopus*,—the “tiger” mosquito—owing to the prevalence of the infecting agent, and after the Panama canal is open this disease may have to be reckoned with in the Malay Peninsula in the future, which is my apology for noting it here. Although not contagious I place it under the infectious diseases for reasons which seem fairly obvious.

Believed to have attacked the troops of Christopher Columbus in A.D. 1495 and to have been carried by the Spanish to the mainland of America.

Europe was invaded by the disease in 1861, 1865, and it appeared in Madrid in 1878.

Its range corresponds to the distribution of the carrier mentioned.

The incubation period is usually 3 days.

The transmitting mosquito must have bitten a patient suffering from the disease *in the first three days of his illness*, and 12 days must elapse from the date of the blood sucking, before the mosquito can infect another case.

From this can be gathered the obvious fact, that in the body of the mosquito the organism of the disease undergoes some development.

The eggs of any mosquito which are laid after the 12th day from infection, are themselves infected and the adult which hatches out from these eggs is itself infective 14 days after birth. (Castellani).

The fever presents usually 2 Paroxysms separated by a remission.

1st attack. Headache, pallor of face followed by marked flushing. Congestions of the eyes and pains in the body, vomiting and insomnia and tenderness of the stomach. After the 2nd day Albumen appears in the urine.

2nd attack. Jaundice and haemorrhages and a recrudescence of the original symptoms.

Black vomit is a bad sign as is suppression of urine. A falling temperature, increase of amount of urine with decrease of albumen, normal sweating and sleep are good signs.

The remission commences on the 2nd to the 4th day.

The temperature falls, pains disappear and the disease may end here. Usually however after a few hours general improvement ease and sleep, the temperature runs

up to 104 F. or 105 and a characteristic sign of the disease appears. "Fagets sign" which consists in an *inverse pulse rate*, i.e. the pulse rate does not follow the rise of temperature and as the illness continues may even fall, until we find a pulse rate of 60 to 70 with a temperature of 104 or over. The mortality is given for Europe and the United States of America as 10 to 25%. For West Africa as 45 to 80%. The differential diagnosis will have to be made from Dengue, Malignant malaria, Blackwater, and Relapsing fever. Relapsing fever will show the spirochete in the blood and no albumenuria.

Blackwater, haemoglobin in the Urine, probably malarial parasites, and an increase of mononeuclear leucocytes.

Yellow fever blood shows a polymorphoneuclear increase if any alteration is present, a slight decrease of Haemoglobin and a decreased power of coagulation.

Dengue shows a rash, no Albuminuria and a leucopenia.

The treatment is principally symptomatic; calomel and salts should be given early in the case.

Pains and Headache treated by Phenacetin, Aspirin, etc.

Plenty of liquid should be given to help the kidneys, and bicarbonate of soda in the drinks to make them alkaline.

The most important point as far as we are concerned in this pamphlet is the prevention of extension of the disease. This consists in the *use of a mosquito curtain constantly round the patient for the first 3 days of the illness* during which time he is infective for the mosquito.

The gauze or curtain used should have a mesh of 20 to the inch.

All means of destroying and driving off mosquitos should be used such as fumigation, oiling of ponds nearby and the general procedure given under the "Mosquito Measures" above.

It is possible that by the time the Panama canal is opened yellow fever will have been stamped out by the active measures taken there by the American authorities.

Relapsing Fever.

During the course of the routine examination of the blood of persons reported to have died of "fever," which is undertaken in the capital of the Federated Malay States, Kuala Lumpur, one specimen was found recently to contain the organism which is known to cause this disease (spirochete probably *S. carteri*) the fact that the man, a Tamil, had lived 2 years in K. Lumpur lends the case an important interest, and it is just possible that some of the cases of fever on Estates—in the absence of microscopic ex-

amination of the blood of patients—may be eventually placed under this heading. The disease is propagated by the bed bug, hence one of the reasons for having the planks of all bed benches and more especially in Hospitals—loose, i.e. unfixed, in order that cleansing may be simplified.

It is probable that the disease will be found to be curable by one of the “higher forms”—if I may be permitted to apply that expression—of Arsenic such as the “606” of Ehrlich, but the treatment on an estate would be impossible. The disease—as is implied in the name—shows itself by repeated attacks of fever, the first attack commencing usually with a shivering fit and the temperature remaining about 103 to 104 till the 6th or 7th day.

Nausea is always present.

The liver and spleen are enlarged but reduce in size during the intermission.

About the 14th day the relapse occurs, fever commencing almost invariably with a shivering fit, this last 3 or 4 days and terminates with a sudden drop of temperature.

A second relapse may occur.

A third relapse is rare.

Complications of the lungs and intestines such as Pneumonia or Dysentery render the case more serious but the death rate is placed as low as 4% in England, at 14% in Egypt and Russia, in America at 2% to 6%.

The description is so akin to the description of a malarial attack that the known presence of even a few cases of the disease in this country tends to prove the necessity for sending sick coolies to hospital at the earliest possible opportunity.

The treatment on the estate will consist in administering Aspirin or some similar drug to relieve the headache and muscle pains which frequently are pressing symptoms, and in protecting the patient from cold in transit to hospital.

Blackwater Fever.

From being entirely free from this disease at least so far as our general experience amongst the natives and from Hospital returns went, the F. M. S. has of late years produced a comparatively serious number of Blackwater fever cases and deaths.

Into the controversy concerning its exact cause I do not think it advisable or necessary to enter here.

The two main theories of to-day are—

1. The malaria per se theory.
2. The quinine theory.

Other theories are—

- a. Malaria plus an unknown factor.
- b. Malaria plus Quinine.
- c. McCay ascribes it to 3 factors.
 1. Injury to the Red Blood cell by the malaria parasite.
 2. The action of the malarial poison.
 3. The administration of sulphates.

- d. Manson in 1893 presumed it was a separate disease because the distribution is "widespread in Africa and very local in India."
- e. Sambon suggests that it has a cause similar to the parasite of Redwater fever in cattle.

Leaving theory we proceed to matters which are useful:—

Predisposing causes. The white race is more liable than the dark races. Anything which lowers the general vitality such as other diseases, cold, change of climate, syphilis, etc.

The warning symptoms (which do not invariably appear and which as far as my experience takes me are not common in this part of the world, a sudden appearance of Blackwater in the course of what was thought to be an ordinary fever attack, being the usual habit of the disease here)—are described by *Castellani* and *Chalmers* in their comprehensive book as follows:—

"Suddenly the patient feels chilly, shivering fits may occur, accompanied by headache, severe pains in the back and legs, an intense feeling of weakness and nausea, which as a rule quickly ends in retching and then vomiting first of food and afterwards of green bile."

The skin becomes jaundiced early and the temperature rises to 103, 104 F.; sooner or later the urine assumes the characteristic "stout"-like appearance.

From the standpoint of the Planter the first thought must be "how soon can I get the case to Hospital" but in the meanwhile I consider the soundest first aid treatment will be this:—

1. If quinine has not been taken for some days, a small dose of say $2\frac{1}{2}$ grains of quinine Bihydrochloride *not Sulphate* should be given.
2. Copious draughts of cold weak tea. Barley water or soda water should be given. If vomiting persists and these cannot be retained, apply a mustard plaster (freshly prepared) on paper, to the pit of the stomach and leave it there for say 15 minutes or until it commences to smart. With as little disturbance of the patient as possible put the feet in hot water in a basin on the bed, and try the effect of giving pieces of ice (to be swallowed whole) by the mouth between the drinks.
3. Should symptoms of collapse or fainting occur Brandy well diluted should be given or Champagne.
4. To reduce the temperature and headache, as much as 10 grains of Aspirin may be given in an hour.
5. Severe pain in the back will be somewhat relieved by hot fomentations made by a flannel shirt—or a part of one—being wrung out of hot water and applied over the Kidneys (the upper part of the small of the back). Be careful to wring the flannel as dry as possible, as wet hot fomentations may blister the skin.

Beyond the above I do not think it would be advisable to attempt any further measures on an estate, and

the question of removal and further treatment of the patient must be left to a Physician.

The above procedures can be extended over a considerable period of time, and in carrying them out one should at least feel that the best is being done for the sufferer that can be done under the circumstances.

As the symptoms abate, relax the treatment, don't worry the case, and as they again recrudescence repeat your procedure.

Keep specimens of the urine at it is voided, in separate utensils, as the depth of the color will be some guide to the Physician on his arrival.

Hospitals.

I have seen every class in charge of the sick I think, and the more I see of the estates which endeavour to economise on their medical department, the more convinced am I that it is folly "of the most superior brand."

I much regret that I have yet to meet the dresser, on \$50 to \$80 a month, who is dependable for a diagnosis; returns one can obtain galore! but they wither under the light of day.

The differential diagnosis between say malarial cachexia, Bright's disease, and anchylostomiasis (with which you are now I trust familiar) are of the utmost importance to the future of an estate; and again, the separation of plague from venereal bŭbo with fever, small-pox from chicken-pox, Typhoid from simple diarrhœa, and a host of similar cases which may require prompt recognition, must surely prove my point, that the dearer article is the cheaper!

In my opinion one of the most important points in dealing with the health of estates and large works is the *instant separation* of the sick from the healthy. No sick coolie should remain one minute in contact with his sound fellows, certainly not one hour, and to leave him one day is criminal!

With the able assistance of Mr. WILKINSON—both of us I may mention working under difficulties—I introduced on the Krian Irrigation Works a system of prompt segregation of the sick, with a view to stamping out the infectious dysentery which played havoc amongst the coolies for a time. The method adopted was: At each line we established a small isolation shed of from four to ten beds; if any coolie complained of dysentery or diarrhœa he was immediately sent to the shed. The furniture consisted of beds, chamber-pots, blankets, tinned milk, and cups, an attendant had charge, and all motions were kept for inspection by a dresser or the medical officer twice daily.

The system which was directed against dysentery would work equally well in other cases, and malingerers, diarrhœa, and typhoid cases could be "spotted" with some approach to accuracy. If the

system be carried a step further it becomes applicable to all forms of disease, all that is necessary being "a shed" divided in such manner as will permit of the segregation of the diseases, Malaria, Dysentery, ulcers with "other diseases" from each other.

This raises the question of the advisability of reception wards on estates whose hospitals are some way from the estate.

Many reception wards have been arranged for on estates in Selangor, but the same mistake has been made in all cases—*the sick have been kept too long in them* and in many cases the reception ward has developed into a Pseudo-Hospital with insufficient staff and without proper facilities for the treatment of the sick.

The reception ward system can only be considered efficient under the following conditions.—

- a. That no sick are permitted to remain therein for more than 24 hours.
- b. That in all cases a qualified dresser (with attendants) is in direct charge and resides near the ward.
- c. That the Visiting Medical Practitioner visits the ward at least thrice weekly and attends when summoned to urgent cases.
- d. That the site is properly drained and the ward kept in a good state of repair and cleanliness.

The system if worked under the above circumstances is most useful for the immediate separation of the sick from the healthy, and provides a very necessary refuge for many cases such as fever attacks, temporary intestinal disturbances, etc. It acts also as an estate outdoor dispensary, thus saving the base hospital, but it should *never be permitted to usurp the place of the estate hospital*.

There are no doubt many points which I have missed in this essay.

I am very deeply indebted to the F.M.S. government for the copies of approved plans and of the Labour code, which add a value to this essay which it could not lay claim to without them.

To Dr. Fletcher, Govt. Pathologist F.M.S., and to Mr. M. S. Parry for reading my proofs and for very valuable corrections and assistance my best thanks are tendered.

To my patient publishers I express my obligations.

P. N. G.

NOTE ON APPENDIX A.

In appending this all too brief report by Dr. Nicholl I have taken the liberty of marking some statements for italicising as they are of great importance.

The article shows well the thoroughness with which Labour is handled from an Hygienic standpoint in Sumatra.

The Photographs attached by Dr. Nicholl show that their lines and buildings generally are much more lofty than those in use in the F. M. S. I consider this important, the very large jack roofs as compared with ours give better ventilation and are more healthful.

The production locally of Antidysenteric serum appears to show that my view of the causation of the disease in the majority of cases coincides with the Dutch view.

The difficulties of adopting the Dutch system of immediate removal of sick Javanese to Hospital appear to lie mainly in the fact that we have no Javanese Dressers and appear to me remediable.

P. N. G.

APPENDIX A.

BY DR. CHARLES VERE NICHOL.

Medical Arrangements on Estates in Sumatra.

In March 1911, I had the pleasure of seeing several of the Estate Hospitals in Sumatra. I have nothing but praise for the excellent and up to date Hospitals we found everywhere we visited. The splendid results obtained as regards health are best exemplified by the fact that in many instances the death rate was as low as 10.21 per 1000. The Hospitals we visited were chiefly those maintained and supported by large Tobacco growing companies. In every instance a large central Hospital, of about 200 beds, is established for a group of Estates, the patients being brought by means of *special spring bullock cart ambulances*.

If a coolie does not work in Sumatra, he is promptly forwarded to Hospital, when he is kept under observation for two days, and then if found to be malingering he is sent on to the Magistrate. This simple and very efficient plan insures all cases of sickness being promptly dealt with and much assists the managers of Estates in their control of malingers.

The Hospital is in charge of a fully qualified medical man, often a German, he lives close by and personally sees and treats every case, often he has an European assistant. He never goes out to visit Estates nor does he do any private practice, and is paid a salary of over £1000 a year. Even Europeans on Estates are obliged to come direct to Hospital, and are not attended on the Estate by the Company's doctor, but come to the European Ward, which is close by the Native Hospital.

The equipment is all quite up to date in these Hospitals, quite as good as that found in London Hospitals. I saw tiled operating theatres with basins arranged so that the water is turned on by means of a pedal, similar to those seen at home. X-Ray and other electrical apparatus for treatment in the large Hospitals are frequently found. Salvarsan is given regularly to cases of Syphilis, and the results were very good. Most of the Sumatra doctors give

606 by the intravenous method. (Salvarsan is not allowed in F. M. S. Government Hospitals. P. N. G.)

On the arrival of a new batch of coolies for an Estate *they are first sent to Hospital for a fortnight, and kept under observation treated with Quinine if indicated by an examination of the blood, and by a course of thymol if ankylostomiasis is present.*

At Medan there is a large Institute for Medical Research, to which all pathological specimens are forwarded for diagnosis. A large number of animals are kept for inoculation purposes, and there are two horses specially kept for procuring serum for the treatment of Dysentery. This Laboratory is entirely supported by funds received from the Planting companies. Before employing labour, every company must make known to the Government, what medical arrangements it has made. *The Planters all seemed to be entirely in sympathy with the Government on medical matters, and realised that good health and efficient work on the Estates were only to be obtained by having the very best Hospital arrangements.* The only thing they grumbled at was the expense of the Hospitals, but they always explained that the latter were so good, that nothing more could be said about the expense.

The Wards are large lofty and well ventilated with, in most cases, doors all along the sides or with large expanded metal windows. The roof is tiled or of corrugated iron. The floors are white washed every day. Separate rooms are provided for dressing and treating septic cases. Separate wards are provided for special cases, and Small-pox is treated in a separate ward in the Hospital. So absolutely is the faith in vaccination, I saw a case in one of the large Hospitals.

Shower and needle baths were seen in most of the Hospitals. Mosquito and fly proof wards are used for Malaria and Dysentery.

The Ward has a latrine at the end of it, with buckets of disinfectant in it.

A Laboratory with apparatus for pathological examinations, and often a very efficient Chinese attendant doing blood examinations, and Widal's reactions. Typhoid Fever seems more common in Sumatra than the F. M. S. In all cases where 606 was given, Wasserman's reaction was done.

A barbed wire fence of about 8 feet high, surrounds the Hospital.

Estates. One of the most striking features about Estates in Sumatra, are the beautiful *well kept surroundings of Bungalows and Coolie Lines.* Round every manager's and assistant's bungalow one finds close cut lawns and padangs with shrubs and palm trees. The mowing machine is much more used than the scythe for keeping the grass cut.

The Estates are visited by the Health Officer and not by the Estate doctor. *Sick coolies are not found in the Lines during working hours, as they are with the doctor or the magistrate.* The pictures show the type of Lines (not published).

The country is very open and flat, and not so difficult to drain as the F. M. S. Tobacco is only replanted in the same place, after several years interval. During this interval lalang etc. grows up over the old planted area, and is not cleared again until the ground is to be replanted. One goes along the road for miles with patches of tobacco alternating with patches of lalang etc. on each side.

The following statistics are interesting and shew the good results obtained. There are very few Tamil coolies in Sumatra, nearly all are Chinese or Javanese. Tamils as a rule are employed only for the care of cattle. When I was in Sumatra Malaria was less common than in the F. M. S., and Typhoid more common.

Death Rate per Thousand.

Hosp. A.	Hosp. B.	Hosp. C.
Year 1907 21	Year 1890-1898 33.06	Year 1909 14.93
„ 1908 16	„ 1908-1909 10.21	
„ 1909 —		
Hosp. D.	Hosp. E.	Hosp. F.
		Year 1907 21.17
Year 1909 14.6	Year 1909 14.1	„ 1908 19.49
		„ 1909 16.89

To introduce the Sumatra methods into the F. M. S. in toto, would, I think, be very difficult. The coolie is not under such complete control and in many cases it is very difficult to get him into Hospital especially when dealing with free Javanese. They much prefer when sick to go off to their kampong, and very few of them have faith either in the European methods or the Tamil dresser, who on most Estates carries out the treatment. On going round some Lines (in Selangor) where there were free Javanese coolies, I discovered a man with signs of Phthisis and advised the manager to send him to Hospital, so that we might examine his sputum for tubercle. Directly I left he gave the manager a month's notice, and said he would prefer to pay up a month's wages than go to Hospital. A mandor on another Estate, who the manager tells me has complete excellent control over the coolies, persistently teaches them that to go to Hospital is quite contrary to the religious ideas they ought to hold.

The Chinese appreciate Hospital more than any other class of Native, and the Tamil is fairly easy to control in this respect. I think also that however keen a manager may be to carry out the requirements of Government and send the sick to Hospital, he often has at the back of his mind, when the Javanese coolie objects, that perhaps after all he is as well looked after by his own people in his own Kampong, as in a Hospital looked after by people in whom he has no faith.

A great step towards the remedying of this state of affairs would be to get more Malays and Javanese trained as dressers, and also to have throughout the country separate Hospitals for separate nationalities. If you have all in one Hospital, it is difficult to both separate the different diseases and the different nationalities, and

the question of Staff and of feeding is difficult. Moreover I would have large Hospitals and a European doctor constantly in charge of each. Excellent in many ways as the dresser is, or perhaps tries to be, he is far better if under constant European supervision.

Some method of teaching hygiene, the benefits of proper food etc., is sadly needed among Estate coolies if the death rate is to be lowered. Notices printed near the lines explaining the elementary principles of hygiene etc., would I think be useful, and managers and assistants might do much to help educate the coolie in these respects. Of course in Smatra there is no question as to whether a coolie shall or shall not go to Hospital etc., but here (F. M. S.) with free coolies, if you coerce, in many instances you lose your labour, which moves on to another Estate, and Labour is often as we know, very hard to get.

CHARLES VERE NICOLL,

Medical Officer,

Group of Estates,
Federated Malay States.

July 19th, 1912.

APPENDIX B.

The Septic Tank.

The Septic Tank in its elemental form consists merely in a hole in the ground into which drains bring sewage and such like material and wherein continual multiplication of the organisms of putrifaction eventually cause a breaking up of such material and render it odourless and eventually innocuous.

The form most appropriate for estates would consist in a tank of say $6' \times 6' \times 6'$ —the depth to vary as the subsoil water level—made of concrete, filled about $\frac{1}{4}$ of the depth with coral rock or coarse metal.

The overflow should be aerated and filtered by being allowed to pass by Herring bone $\frac{1}{2}$ pipe drains on to the soil before entering any river or drain.

The distance of safety from the River or drain of the Tank will vary with the constitution of the soil over which the watery material has to pass, but I should be inclined to advise 100' as the lowest limit of safety.

It is important to keep such tanks clear of grease and coarser refuse, but the ordinary washings of lines drains such as rice-refuse etc. will be dealt with by the tank.

The sludge which accumulates after a time should be removed occasionally and it will be found to be a highly nitrogenous manure suitable for use only at a distance from lines and buildings.

Flooding of Septic Tanks by storm water should be provided against as far as possible and the area liable to be affected by such flooding restricted by a band.

I am quite convinced that the system of leading lines drains into the ordinary road drain is a fertile source of disease in this country and that any tank which would allow of sufficient delay for some purity to take place before the contents of the drains reach the Road or estate main drain would be an improvement on the present system which is dangerous.

More elaborate and efficient septic tanks can be seen in action at Singapore and Kuala Lumpur, and a complete sewage system on a large scale at Rangoon.

LABOUR CODE, 1912.

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SCHEDULES.

RULES.

FEDERATED MALAY STATES.

ENACTMENT No. 6 OF 1912.

An Enactment to make provision for matters relating to Labour.

ARTHUR YOUNG,
President of the Federal Council.

[21st September, 1912.]

IT is hereby enacted by the Rulers of the Federated Malay States in Council as follows:

PART I.

PRELIMINARY.

CHAPTER I.

SHORT TITLE AND REPEAL.

1. This Enactment may be cited as "The Labour Code, 1912," and shall come into force upon such date as shall be appointed by the Chief Secretary to Government by notification in the *Gazette*. Short title and commencement.

2. The Enactments mentioned in the first schedule are hereby repealed. Repeal.

3. The provisions of Part VIII of this Enactment shall, as near as may be, apply to natives of Netherlands India and the places where they are employed, but with this exception none of the provisions of this Enactment which may be inconsistent with the provisions of the Netherlands Indian Labourers' Protection Enactments, 1909, shall apply to any native of Netherlands India who has entered into a contract of service under the provisions of those Enactments or to the employers with whom such contract of service has been entered into. Saving of Netherlands Indian Labourers' Protection Enactments, 1909.

CHAPTER II.

INTERPRETATION.

4. For the purposes of this Enactment unless the context otherwise requires: Interpretation.

"Agreement" means a verbal engagement to labour entered into in accordance with the provisions of this Enactment. "Agreement."

"Contract" means a written engagement to labour entered into in accordance with the provisions of this Enactment. "Contract."

"Contract labourer" means a person who is legally bound to labour by virtue of a contract. "Contract labourer."

"Court" means the Court of a Magistrate of the First Class. "Court."

"Domestic servant" includes coachmen, grooms, motor-car drivers, gardeners, water-carriers and other house, stable or garden servants employed in, or in connection with, the domestic services of any public or private dwelling-house or eating-house, "Domestic servant."

“Employer.”

“Employer” includes every person and every body of persons, corporate or unincorporate, who or which enters into an agreement or contract with any labourer as hereinafter defined, and the duly authorised agent or manager of such person or body of persons.

“Immigrant ship.”

“Immigrant ship” means a ship carrying immigrants.

“Labourer.”

“Labourer” includes every Asiatic artificer, miner, servant in husbandry, and every other Asiatic employed for the purpose of personally performing any manual labour or of recruiting or supervising Asiatics for, or in the performance of, such labour, but does not include domestic servants.

“Lines.”

“Lines” means any building or collection of buildings used or intended to be used, either temporarily or permanently, for the housing of labourers employed on an estate.

“Master.”

“Master” means the person for the time being in charge of a ship.

“Medical Officer.”

“Medical Officer” means the Principal Medical Officer, Federated Malay States, and includes any officer to whom the Principal Medical Officer shall, by writing under his hand, have delegated the exercise or performance of all or any of the powers or duties conferred or imposed on a Medical Officer by this Enactment to the extent of the powers or duties so delegated.

“Place of employment.”

“Place of employment” means any place where work is carried on by or on behalf of an employer.

“Port Officer.”

“Port Officer” includes the Conservator of a Port or the Harbour Master.

“Protector.”

“Protector” means the Secretary for Chinese Affairs and includes such other officers as the Chief Secretary to Government may declare, by notification in the *Gazette*, to be vested with the powers conferred upon the Protector by this Enactment.

“Resident.”

“Resident” means the Resident of the State in which the place of employment is situated.

“Ship.”

“Ship” includes every kind of vessel used for the conveyance of passengers by water whether propelled by oars or otherwise.

Controller of Labour.

5. (i) It shall be lawful for the Chief Secretary to Government to appoint an officer to be styled the “Controller of Labour,” hereinafter referred to as “the Controller,” and also to appoint one or more officers to be styled “Deputy Controller of Labour,” or “Assistant Controller of Labour,” who, subject to such limitations as the Chief Secretary to Government may by rule prescribe, may perform all duties imposed and exercise all powers conferred on the Controller by this Enactment, and every duty so performed shall be deemed to have been duly performed for the purposes of this Enactment.

(ii) It shall also be lawful for the Chief Secretary to Government to appoint such other officers as he may deem necessary for the purpose of giving effect to the provisions of this Enactment.

Existing Enactments not affected.

6. Nothing in this Enactment shall operate to relieve any employer of any duty or liability imposed upon him by the provisions of any other Enactment for the time being in force or to limit any powers given to any Government officer by any such Enactment.

7. All agreements and contracts valid and in force at the date of the coming into force of this Enactment shall continue to be in force after such date, and, subject to the express provisions in any such agreement or contract contained, the parties thereto shall be subject to and entitled to the benefit of the provisions of this Enactment.

Extent of retrospective action of Enactment.

PART II.

PROVISIONS RELATING TO IMMIGRATION.

CHAPTER III.

ARRIVAL, EXAMINATION AND DETENTION OF IMMIGRANTS.

8. It shall be lawful for the Chief Secretary to Government

(a) to establish at any port in the Federated Malay States depôts for the examination of immigrants (hereinafter called examination depôts);

Examination depôts.

(b) to establish at any place in the Federated Malay States depôts for the detention of indebted immigrants (hereinafter called detention depôts).

Detention depôts.

9. (i) No immigrant shall land in or enter the Federated Malay States except at such ports and places as the Chief Secretary to Government may, by notification in the *Gazette*, prescribe, or at such ports or places until authorised by the Controller of Labour or an officer of his department.

Ports and places at which immigrants may land or enter the Federated Malay States.

(ii) Any master causing or permitting any immigrant to land contrary to the provisions of sub-section (i) shall be liable to a fine not exceeding fifty dollars for each immigrant so landing. A master from whose ship an immigrant shall land contrary to the provisions of sub-section (i) shall, in the absence of proof to the contrary, be deemed to have caused or permitted him so to land.

Penalty and presumption.

10. Ships having any immigrants on board shall, on arrival within signalling distance of any port prescribed under the provisions of the last preceding section, hoist such signals as may be prescribed by rules under this Enactment.

Arrival of ships to be signalled.

11. On the arrival of the ship the Port Officer shall give immediate notice to the Controller of Labour, or in the case of an immigrant ship arriving at a port in the Federated Malay States on a voyage from China to the Protector, who shall forthwith proceed on board.

Controller to receive notice of arrival and go on board.

12. (i) Subject to the provisions of the Customs Regulations Enactments, 1907, it shall not be lawful for any person other than the Controller of Labour, Medical Officer, Port Officer, the Chief Police Officer, or any of their subordinate officers, or in the case of an immigrant ship arriving at a port in the Federated Malay States on a voyage from China the Protector, or the owner, agent or consignee of an immigrant ship to communicate with any such ship on its arrival in port, except for the purpose of landing passengers or disembarking immigrants under the provisions of this Part until after the immigrants on board thereof have been disembarked; and no immigrant shall disembark or land, or attempt to disembark or land, from any such ship except as provided by this Part or by rules made under this Enactment.

No communication with ship till after immigrants landed except by certain officers.

Exemption.

(ii) Nothing in this section shall be held to prevent the Consul-General, Consul, Vice-Consul or Consular Agent of any foreign Power from boarding any ship of the nationality represented by him.

Penalty.

(iii) Any person communicating, or attempting to communicate, with any immigrant ship contrary to the provisions of sub-section (i), and any immigrant disembarking, or attempting to disembark, contrary to the provisions of this Enactment, and any person aiding or abetting any immigrant to disembark from any such ship, contrary to the provisions of this Enactment, shall be liable to a fine not exceeding five hundred dollars and in default of payment to imprisonment of either description for a period not exceeding six months.

Immigrants refusing to go to a depôt or absconding.

13. (i) Any immigrant who refuses or omits to go to a detention depôt or to an examination depôt and there to be examined when required so to do by a duly authorised officer, and any immigrant who absconds, or attempts to abscond, from such depôt before his examination is completed, shall be guilty of an offence, and may be arrested by any police officer or by an officer authorised by the Controller or the Protector and taken to an examination depôt or to the Chinese Protectorate or to a police station and detained there until he can be brought before the Controller or the Protector.

Penalty.

(ii) Any person who commits, or who abets the commission of, an offence under this section shall be liable, on conviction, to a penalty not exceeding twenty-five dollars or to imprisonment of either description for any term not exceeding one month.

Enticing immigrant from depôt.

14. Any person who shall induce, or attempt to induce, to go to any place other than a depôt established under this Enactment, or who shall entice, or attempt to entice, away from a depôt any immigrant who has been lawfully required to go to, or is lawfully detained in, a depôt under this Enactment, shall be liable to a fine not exceeding fifty dollars or to imprisonment of either description for a term not exceeding seven days for each immigrant in respect of whom such offence shall have been committed, or attempted to be committed.

CHAPTER IV.

SPECIAL PROVISIONS RELATING TO CHINESE IMMIGRANTS.

Limitation of application.

15. The provisions of this Chapter shall only apply to immigrants from China and shall, where such provisions are repugnant to the other provisions of this Enactment, be taken to repeal for the purpose of carrying into effect this Chapter such other provisions but except in so far as is necessary to give effect to this section the provisions of this Chapter shall be additional to, and in extension of, the other provisions of this Enactment.

Interpretation.

16. In this Chapter unless the context otherwise requires :

“Advances.”

“Advances” includes maintenance and clothes provided and cash given, whether provided or given in China or on board ship or in the Colony, and all expenses of bringing an immigrant from China.

“China.”

“China” includes Hongkong, Macao and all such territory as formed part of the Chinese Empire on the 1st day of January, 1841.

“China immigrant ship.”

“China immigrant ship” means an immigrant ship arriving at a port in the Federated Malay States on a voyage from China.

“Creditor” means the person to whom an immigrant is found as hereinafter provided to be indebted for advances and includes a creditor’s agent in the Federated Malay States. “Creditor.”

“Immigrant” means a native of China (not being a first or second class passenger nor the personal servant of such passenger nor a person on the articles of a ship) travelling by sea to, or who has within one year arrived by sea at, any port of the Federated Malay States from China or from a port in the Colony at which he has within the two months preceding such arrival landed from a vessel arriving at such port from China. “Immigrant.”

“Indebted immigrant” means any immigrant who is found as hereinafter provided to be indebted for passage money and advances, whether he has before his arrival in the Federated Malay States entered into a contract or not, and includes any such person so long as any contract valid under this Enactment entered into by him remains undetermined. “Indebted immigrant.”

“Passage money” includes the value of a passage supplied free. “Passage money.”

“Passage money and advances” includes passage money without advances and advances without passage money. “Passage money and advances.”

“Qualified medical practitioner” means (notwithstanding anything contained in the Medical Registration Enactments, 1907) the holder of any of the diplomas, degrees or licences from time to time specified by the Chief Secretary to Government as constituting the qualification of a qualified medical practitioner under this Enactment. “Qualified medical practitioner.”

17. On the departure of an immigrant ship from China on a direct voyage to any port or ports in the Federated Malay States, or from Singapore or Penang on a voyage to any port or ports in the Federated Malay States, the agent or consignee of such ship at any such port shall forthwith inform the Protector in the State in which such port lies of the approximate date and, if possible, time of the arrival of such ship and of the number of immigrants to be landed at such port: provided that in the case of an immigrant ship departing from Singapore or Penang such agent or consignee need only inform the Protector of the number of persons travelling on such ship who are known to the master or to the agent in the Colony of such ship to be immigrants. Departure of immigrant ship to be notified.
Proviso.

18. The master of every China immigrant ship shall on arrival at any port in the Federated Malay States prevent all immigrants from disembarking until such ship has been boarded as provided by section 20. Duty of master of China immigrant ship on arrival.

19. Any person who without reasonable excuse omits to comply with the provisions of section 17 or of section 18 shall be liable, on conviction, to a fine not exceeding two hundred and fifty dollars. Penalty.

20. (i) On the arrival of a China immigrant ship at a port in the Federated Malay States she shall as soon as possible be boarded by an officer of the Chinese Protectorate, to whom the master of such ship shall give a list containing the names of all immigrants brought by such ship from China and such information relating to the immigrants, the payment of their passage money, the place of their embarkation, their state of health during the voyage, the deaths Boarding of ship by officer. Master to give information.

of or absence of any immigrants who may have been on board at any time at or after the ship's departure from her first port of departure in China on the voyage, and any other matters as he may reasonably be required to give for the purposes of this Enactment or of the Women and Girls Protection Enactments, 1902.

Penalty.

(ii) The master of a China immigrant ship intentionally omitting to comply with the provisions of sub-section (i) or furnishing as true any list or information which he knows or has reason to believe to be false, or refusing to answer such questions as such officer may reasonably put to him for the purposes of this Enactment, shall be guilty of an offence under sections 176, 177 or 179 of the Penal Code, as the case may be.

Removal
to examination
depôt.

21. When any China immigrant ship is boarded on arrival by an officer of the Chinese Protectorate such officer may cause all or any of the immigrants on board to be removed to an examination depôt, and any immigrant removed to such depôt shall on arrival thereat be examined by an officer of the Chinese Protectorate as to the payment of his passage money and as to any advances that may have been received by him and as to any engagement to repay such passage money and advances, or any contract entered into, or proposed to be entered into, by him, and as to his age and fitness to labour, and as to any such other matters as may seem necessary for the purposes of this Enactment or the Women and Girls' Protection Enactments, 1902.

Powers of
search.

22. If the Protector has reason to believe that any immigrant who has arrived in the Federated Malay States by an immigrant ship is indebted for passage money and advances and has without permission from an officer of the Chinese Protectorate entered any place other than a depôt established under Chapter III, it shall be lawful for the Protector or any officer of the Chinese Protectorate authorised in writing by him to search any place (including any house or ship) in which such immigrant as aforesaid is believed to be, and if he is found to take him forthwith to an examination depôt for examination under the last preceding section. If in the course of such search any documents relating to the indebtedness of such immigrant are found by the Protector or such officer he may seize such documents and retain them in his possession for so long as they are required for the purpose of any proceeding arising out of the matter.

Immigrants not
indebted for
passage money
to be released.

23. Every immigrant who upon such examination as aforesaid is found not to be indebted for passage money and advances shall forthwith be allowed to leave the examination depôt.

Immigrant
brought to
Federated
Malay States by
fraud.

24. When it appears upon such examination as aforesaid that an immigrant has been brought to the Federated Malay States by fraud or by misrepresentation as to work or wages or other matters, the Protector shall enquire into his case and, if satisfied that he has just cause of complaint, shall either release him or treat him under section 26 as an immigrant who has been declared permanently unfit for labour in the Federated Malay States.

Immigrant
indebted to
be detained in
depôt.

25. Every immigrant found to be indebted for passage money and advances may be detained in a detention depôt until he has made arrangements satisfactory to the Protector for the payment of his debt: provided that no immigrant without his consent to be signified

Proviso.

before the Protector shall be so detained at any time after such debt shall have been paid or for a longer period than ten days except as provided by section 33.

26. (i) When upon an examination made under the provisions of this Chapter or at any time before he has made arrangements satisfactory to the Protector for the payment of his debt any indebted immigrant appears to the Protector to be unfit for labour owing to disease or from physical or mental debility or defect, or to be suffering from any complaint, he may be sent to a Government hospital for medical examination and treatment and shall, except as provided in sub-section (iii), be detained there at the expense of his creditor till declared by the Medical Officer in charge of the hospital

Immigrant
unfit for labour

(a) to be fit for labour, or to be fit for certain kinds of labour, or for labour in certain places, in which case he shall be handed over to the Protector, or to a person authorised by the Protector to receive him, and shall then be detained in a dépôt under the care of the Protector as provided by this Chapter; or

(b) to be incurable or permanently unfit for labour in the Federated Malay States, in which case information shall be given to the Protector, who may cause such immigrant at the first opportunity to be sent back at the expense of his creditor to the place in China from which he was brought.

(ii) When upon such examination or at any such time as aforesaid, any indebted immigrant appears to be under the age of sixteen or over the age of forty-five years he may be sent back at the expense of his creditor to the place in China from which he was brought.

(iii) Any indebted immigrant who has been sent to a Government hospital under sub-section (i) may, if or when he be declared by the Medical Officer in charge of such hospital to be fit to travel, be sent back, if his creditor so desires, at the expense of his creditor to the place in China from which he was brought.

27. (i) Any indebted immigrant who refuses or omits to go to a hospital or to a detention dépôt having been ordered to do so under the provisions of section 26 and any indebted immigrant leaving or attempting to leave such dépôt without the permission of an officer authorised by the Protector or such hospital without the permission of the Medical Officer in charge, shall be guilty of an offence and may be arrested by any police officer, or by an officer authorised by the Protector, and taken to a detention dépôt or to the Chinese Protectorate or to a police station and detained there until he can be brought before the Protector.

Immigrant
refusing to
go to a dépôt or
absconding.

Arrest.

(ii) Any person who commits or abets the commission of an offence under this section shall be liable, on conviction, to a penalty not exceeding twenty-five dollars or to imprisonment of either description for any term not exceeding one month.

Abetment.

Penalty.

28. The Protector may fix from time to time the maximum sum for which any immigrant from any port in China to any port in the Federated Malay States shall be indebted as for passage money and advances and such maximum sum shall be notified in the *Gazette*.

Maximum sums
for passage
money and
advances.

Immigrant detained unable to fulfil promise to repay passage money.

29. Any indebted immigrant who may have been found on examination to have obtained passage money and advances by a promise to find on his arrival in the Federated Malay States some person to repay such passage money and advances and who is unable to fulfil such promise without entering into a contract to labour and is unwilling to enter into such contract may, at the discretion of the Protector, be released or sent back to China at the expense and with the consent of his creditor.

Immigrant refusing to fulfil promise to enter into contract.

30. (i) Any indebted immigrant found upon examination made under the provisions of section 21 to have obtained passage money and advances by a promise to enter into a contract on arrival in the Federated Malay States who, without reasonable cause, refuses within ten days of his arrival to enter into such contract or to repay the passage money and advances for which he may have been found to be indebted shall be liable, on conviction, to a fine not exceeding twenty-five dollars or to imprisonment of either description not exceeding one month, and if on the expiration of any sentence of imprisonment imposed for such refusal or in default of payment of such fine he shall still persist in such refusal as aforesaid he shall be liable, on conviction, to a further fine not exceeding twenty-five dollars or to a further period of imprisonment not exceeding two months, and after such further conviction and punishment may, at the discretion of the Protector, be sent back to China at the expense and with the consent of his creditor.

Penalty.

Effect of payment of fine.

(ii) If upon conviction such immigrant pay a fine equal to or exceeding the amount in which he has been found to be indebted for passage money and advances he shall forthwith cease to come under the provisions of this section.

Disposal of fines.

(iii) Any fine paid under this section shall in the first instance be applied to the payment to the creditor of any sum in which the immigrant has been found to be indebted for passage money and advances.

Immigrant found unfit to fulfil promise to enter into contract.

31. Any indebted immigrant found upon examination to have obtained passage money and advances by a promise to enter into a contract on arrival in the Federated Malay States to labour in any specific kind of work who is declared upon medical examination to be unfit for such labour may, at the discretion of the Protector

(a) be sent back to China at the expense of his creditor;

(b) enter into a contract for such other work as he may be declared fit to perform, and for this purpose may be sent to another place in the Federated Malay States or in the Colony; or

(c) be released.

Who cannot find an employer.

32. (i) Any indebted immigrant found upon examination to have obtained passage money and advances by a promise to enter into a contract on arrival in the Federated Malay States to labour in any specific kind of employment for whom within ten days of his arrival in the Federated Malay States the person bringing him into the Federated Malay States shall be unable to find such employment, may, at the discretion of the Protector, be released or be sent back

to China at the expense of his creditor, or may at the expense of his creditor be sent to find such employment at another place in the Federated Malay States or in the Colony.

(ii) Unless they come within the provisions of section 26, stowaways shall be treated as immigrants who have obtained passage money and advances by a promise to enter on arrival in the Federated Malay States into a contract to perform any kind of labour.

33. (i) Whenever an immigrant is to be sent back to China at the expense of his creditor under the provisions of this Part or to be sent to hospital under the provisions of section 26 or to another place in the Federated Malay States or in the Colony under the provisions of section 32 all arrangements shall be made by the Protector, and all necessary expenses of, and incidental to, sending such immigrant back to China or to hospital or to another place in the Federated Malay States or in the Colony may be recovered from the creditor of such immigrant in any Civil Court at the suit of the Protector, whose certificate as to the amount of such expenses shall be sufficient evidence thereof.

(ii) Any such immigrant may pending his departure be detained at the expense of a creditor in a detention dépôt.

34. (i) The Protector may require any person who on behalf of an indebted immigrant offers to repay to his creditor the passage money and advances of such immigrant to enter into a contract with the immigrant.

(ii) It shall be lawful for the creditor, with the approval of the Protector, to demand from any person proposing to enter into such contract a further sum in addition to the passage money and advances of such immigrant: provided that the immigrant shall not be liable under such contract to repay any sum in excess of the maximum sum fixed under section 28.

35. In the case of any contract with an indebted immigrant which has been executed outside the Federated Malay States and the Colony or is about to be executed in the Federated Malay States, the Protector may require

(a) if the contract is to be performed outside the Federated Malay States, that the employer furnish security to the satisfaction of the Protector for the due fulfilment of the contract by him;

(b) that the immigrant be photographed at the expense of the employer and that a copy of the photograph be deposited in the office of the Protector;

(c) that the immigrant be examined at the expense of the creditor by a Medical Officer in the service of Government or approved by the Principal Medical Officer as to his fitness to perform the work which he proposes to perform.

36. Notwithstanding anything to the contrary contained in this Enactment every contract entered into by an indebted immigrant shall terminate on the 30th day of June, 1914, and no contract shall be entered into by an indebted immigrant after that date.

Conditions on which Chinese immigrants may be imported.

37. No immigrant shall be imported into the Federated Malay States on a China immigrant ship except on the following conditions :

(a) The ship in which he is imported if carrying more than twenty immigrants shall carry during the whole course of the voyage a qualified medical practitioner who shall attend to the health of the passengers and the sanitation of the ship ;

(b) The master of the ship shall on arrival at any port within the Federated Malay States produce to the Boarding Officer a certificate from the port of departure signed, if such port be Hongkong, by the Port Health Officer, or in the case of any Chinese port, by a qualified person appointed by the British Consul, stating :

- (1) The voyage the ship was intended to make ;
- (2) That at the time of her departure she had the proper complement of officers and seamen and was sufficiently equipped for the voyage ;
- (3) The number of immigrants on board and that such immigrants together with the other passengers on board were not in excess of the number of passengers which may properly be carried on board such ship ;
- (4) That at the time of her departure there was on board the ship a good and sufficient supply of food, pure water and medicines for the use of the immigrants during the intended voyage ;
- (5) That the accommodation and sanitary arrangements for the immigrants during the voyage on board the ship were satisfactory.

Penalty for wrongful importation.

38. (i) Every person who shall import, or attempt to import, any immigrant contrary to the provisions of section 37, and every person who shall aid, abet, procure or be interested or concerned in or knowingly derive any profit from the importation, or attempted importation, of any immigrant contrary to the said provisions shall be liable to a fine not exceeding one thousand dollars or to imprisonment of either description for any period not exceeding twelve months or to both fine and imprisonment.

(ii) Any ship which shall be used for the importation, or attempted importation, of any immigrant contrary to the provisions of section 37 shall be liable to forfeiture and may be seized and detained by the Chief Police Officer until adjudicated on according to law.

(iii) Proceedings to enforce any forfeiture under this section may be taken in the name of the Chief Secretary to Government.

(iv) At any time after the detention of any ship under sub-section (ii) it shall be lawful for the Chief Secretary to Government to release such ship upon such security as he shall think sufficient or without security.

CHAPTER V.

SPECIAL PROVISIONS RELATING TO INDIAN IMMIGRANTS.

39. The provisions of this Chapter shall apply to immigrants from India only and shall, where such provisions are repugnant to the other provisions of this Enactment, be taken to repeal for the purpose of carrying into effect this Chapter such other provisions, but except in so far as is necessary to give effect to this section the provisions of this Chapter shall be additional to, and in extension of, the other provisions of this Enactment.

Limitation of application.

40. In this Chapter unless the context otherwise requires :

Interpretation.

“A day’s work” means either work for a day of nine hours or an equivalent task as provided by section 100.

“A day’s work.”

“Certificated immigrant” means an immigrant who holds a certificate in the form A in the second schedule or to the like effect, issued under the authority of the Indian Government or of the Government of the Colony or under this Enactment or under any Enactment hereby repealed.

“Certificated immigrant.”

“Immigrant” means an Asiatic native of British India, and for the purposes of this Chapter every Asiatic of Indian descent shall be deemed to be a native of British India until the contrary is proved.

“Immigrant.”

“Place of employment” means a place where a contract under this Enactment is to be performed or a place where any of such kinds of labour or work as are specified in section 150 or as may hereafter be declared, under the provisions of the said section, to be subject to the provisions of Chapter XIII is carried on and on which ten or more free immigrants reside or are employed.

“Place of employment.”

“Statute immigrant” means an immigrant who is bound by the provisions of a written contract under this Enactment.

“Statute immigrant.”

“Working day” means a day on which a day’s work is performed by an immigrant on a place of employment.

“Working day.”

41. Nothing in this Chapter shall apply to

Exemption.

(a) first-class cabin passengers ;

(b) second-class cabin passengers arriving in a ship in respect of which the Chief Secretary to Government has made such declaration as next hereinafter mentioned ;

(c) menial servants in actual service ;

(d) seamen, firemen and other persons serving on board a ship.

The Chief Secretary to Government may declare from time to time, by notification in the *Gazette*, that the second-class cabin passengers of certain ships or lines of ships shall be exempted from the operation of this Chapter.

42. Every immigrant holding an unexpired certificate to the effect indicated in section 43 issued by the proper authority in British India or in the Colony shall have all the immunities given in this Chapter to immigrants holding like certificates issued in the Federated Malay States.

Certificates issued in India or the Colony.

In the
Federated
Malay States.

43. Any immigrant in the Federated Malay States may apply to the Controller for a certificate declaring that the person named and described therein is not subject to the provisions of this Part.

Issue of certi-
ficate.

44. The Controller shall, if he is of opinion that the applicant is not a labourer or of a class ordinarily employed in agricultural work, issue forthwith under his hand and seal free of charge a certificate in the form or to the effect of form A in the second schedule.

Particulars to
be entered in it.

45. Every certificate issued under this Chapter shall contain the names of the holder thereof and of his or her father, and shall specify his or her place of abode in India, age, sex, religion, caste (if any) and calling. A general description of the holder of such certificate and of any marks on the portions of the body ordinarily unclothed by which he or she may be more certainly known shall also be written therein. The certificate shall be dated on the day of its issue and shall have force until the holder enters into a contract under this Enactment.

Certificated
immigrant
exempt from
restrictions.

46. A certificated immigrant shall, upon production of his certificate, be wholly exempted from every restriction imposed upon immigrants by this Part.

Certificate to be
produced when
required.

47. Every certificated immigrant shall be bound to produce his certificate when required to do so by a Magistrate or police officer or by an officer of the Controller's Department or by the master or officer of a ship in which such certificated immigrant is, or proposes to be, a passenger; and if he shall refuse or fail to do so when so required he may be treated in all respects as an uncertificated immigrant until such time as he shall produce such certificate.

New certificate.

48. A certificated immigrant whose certificate has been lost or destroyed may apply to the Controller for a fresh certificate, and the same shall be issued accordingly: provided that it shall be lawful for the Controller to require satisfactory evidence of such loss or destruction before issuing a new certificate.

Special classes
may be
exempted.

49. The Chief Secretary to Government may from time to time, with the consent of the Government of India transmitted through the Government of the Straits Settlements, declare that any class of immigrants is not a labouring class and that any person belonging thereto is entitled to a certificate without enquiry; or that any class of immigrants is a labouring class and that persons belonging thereto are not entitled to certificates.

Examination
of immigrants.

50. (i) (a) All immigrants on arrival at the port of disembarkation shall be examined by a Government Medical Officer;

Immigrant
unfit to travel;

(b) Any immigrant found on such examination to be unfit to travel may be sent forthwith to a Government hospital and there detained until he is pronounced by the Medical Officer in charge of such hospital to be either fit to travel or to be incurable or permanently unfit to labour;

fit to travel;

(c) When an immigrant sent to a Government hospital under this section is found to be fit to travel the Controller may, if the employer for whom such immigrant was recruited so desires, send him back to the place in India where he was recruited;

(d) When an immigrant sent to a Government hospital under this section is found to be incurable or permanently unfit to labour the Controller may send him back to the place in India where he was recruited and may detain him so long as may be necessary for that purpose. or incurable.

(ii) All expenses of the maintenance and the treatment in hospital of any immigrant sent to a Government hospital under this section, and all expenses of sending back under this section any immigrant found to be fit to travel or to be incurable or permanently unfit to labour to the place where he was recruited, may be recovered by the Controller from the employer for whom such immigrant was recruited or from the agent by whom such immigrant was imported. Hospital and travelling expenses.

(iii) The Chief Secretary to Government may make rules for the examination of immigrants by Medical Officers under this section and prescribe the fees to be charged for the maintenance and treatment of immigrants in a Government hospital. Power to make rules.

51. The Controller shall explain as far as possible to every immigrant arriving in the Federated Malay States, that no contract by an immigrant for such labour as in section 62 is mentioned or referred to is valid unless made in accordance with Part III. Such explanation may be given either verbally or by handing to the immigrant a paper containing the necessary information in Tamil or in some other language understood by him. Contract law to be explained to immigrants.

52. It shall be lawful for the Chief Secretary to Government to appoint an Emigration Agent or Agents to reside at any place in India from which emigrants depart from India to the Federated Malay States. Agent in India.

53. (i) Any immigrant who has received a free passage from India under a promise to enter into a contract under this Enactment may be detained in a dépôt until he shall have entered into such contract or shall have paid to the Controller the sum of fifty dollars or such other sum as the Chief Secretary to Government shall from time to time fix by notification in the *Gazette*. Detention at a dépôt.

(ii) Any immigrant who has received a free passage from India under a promise to labour in the Colony of the Straits Settlements or in a country or State to which Indian emigration is authorised by the Governor of the Straits Settlements, with the consent of the Government of India, or in the Federated Malay States or in Johore may be detained in a dépôt until he can be forwarded to his destination.

(iii) Except as provided in section 56 no immigrant shall be detained in a dépôt against his will for more than one week.

54. Any immigrant who has received a free passage from India under a promise to labour in the Colony of the Straits Settlements or in a country or State to which Indian emigration is authorised by the Governor of the Straits Settlements, with the consent of the Government of India, or in Johore, and who neglects or refuses to leave the Federated Malay States in pursuance of his promise shall be guilty of an offence and shall be liable, on conviction, to a fine not exceeding fifty dollars or to imprisonment of either description for a Penalty for failure to proceed to fulfil promise to labour.

Proviso.

term not exceeding three months: provided that if such immigrant shall pay to the Controller the sum of fifty dollars or such other sum as the Chief Secretary to Government shall from time to time fix, by notification in the *Gazette*, he shall not be liable to be prosecuted under this section. Any such sum so received by the Controller or such part thereof as the Controller may think fit shall be paid by him as to one-half thereof to the employer and as to one-half thereof to the Indian Immigration Fund.

Penalty for failure to proceed to place of employment.

55. Any immigrant who has received a free passage from India under a promise to labour in the Federated Malay States, and who neglects or refuses to proceed to his place of employment in pursuance of his promise shall be guilty of an offence and shall be liable, on conviction, to a fine not exceeding fifty dollars or to imprisonment of either description for a term not exceeding three months: provided that if such immigrant shall pay to the Controller the sum of fifty dollars or such other sum as the Chief Secretary to Government shall from time to time fix, by notification in the *Gazette*, he shall not be liable to be prosecuted under this section. Any such sum so received by the Controller or such part thereof as the Controller may think fit shall be paid by him as to one-half thereof to the employer and as to one-half thereof to the Indian Immigration Fund.

Redemption of female immigrant.

56. Whenever it appears to the Controller that any female immigrant tendering the sum of fifty dollars or other prescribed sum in redemption of her obligation to enter into a contract under this Enactment or to labour in the Colony of the Straits Settlements or in a country or State to which Indian emigration is authorised as aforesaid, or in any other of the Federated Malay States or in Johore, is in the custody or control of any other person, he may refuse to accept such sum and to permit such obligation to be redeemed unless and until the person in whose custody or control such female immigrant appears to be has given reasonable security to the satisfaction of the Controller that such female immigrant shall not leave the State without the previous consent in writing of the Controller and shall not be disposed of as a prostitute or for immoral purposes and that she shall be produced before the Controller whenever he so requires. In default of such security being given within seven days the Controller at his discretion may cause such female immigrant to be returned to India and for that purpose may cause her to be detained for any further period not exceeding twenty-one days.

Security.

57. No immigrant shall depart from the Federated Malay States except to go

- (a) to a country or State to which Indian emigration is authorised by the Governor of the Straits Settlements, with the consent of the Government of India; or
- (b) to British India or Ceylon; or
- (c) to the Colony of the Straits Settlements or to Johore.

Immigrant not to leave the Federated Malay States.

58. The Chief Secretary to Government may from time to time declare, by notification in the *Gazette*, to what countries or States Indian emigration is authorised by the Governor of the Straits Settlements, with the consent of the Government of India.

To what countries or States Indian emigration lawful.

59. Any immigrant unlawfully departing or attempting to depart from the Federated Malay States in breach of the provisions of section 57, or making any false representation to the Contrôller for the purpose of obtaining any certificate under this Chapter, shall be guilty of an offence and shall be liable to a fine not exceeding twenty dollars, and may be arrested without warrant by any police officer or officer of the department of the Controller; and any person abetting an offence under this section shall be liable to a fine not exceeding fifty dollars or to imprisonment of either description for a term not exceeding seven days for each immigrant whose offence he has abetted. The master of a ship in which an immigrant shall embark in order to depart unlawfully from the Federated Malay States shall, until the contrary be proved, be deemed to have abetted such offence.

Penalty for unlawful departure from Federated Malay States or abetment thereof.

60. In every judicial proceeding a certificate in form B in the second schedule purporting to be signed by an Emigration Agent of the Government of the Colony or of the Federated Malay States in India at the port of embarkation shall be deemed to be evidence that the persons named therein have respectively received a free passage from India under a promise to enter into a contract under this Enactment, or a contract to labour in the Colony of the Straits Settlements or in some country or State to which Indian emigration is authorised by the Governor of the Straits Settlements, with the consent of the Government of India, or in the Federated Malay States or in Johore, as the case may be.

Evidence of promise to enter into contract.

61. Any immigrant of the age of fifteen years or upwards may enter into a contract under this Enactment and may sue and be sued thereon as though he were of full age.

Immigrant of fifteen years may contract.

62. Every contract made or entered into after the commencement of this Enactment by a labourer for any of the following kinds of labour, that is to say—

Contract must conform with this Enactment.

- Agriculture, including the treatment of produce;
- Road-making;
- Canal-making;
- Railway construction and maintenance;
- Mining and work on mines;
- Quarrying and stone-breaking;
- Brick-making;

or for any other work or labour which the Chief Secretary to Government may from time to time, by notification in the *Gazette*, declare to be subject to the provisions of this Enactment shall be void and of no effect unless it is made in accordance with the provisions of this Enactment.

63. Any contract with an immigrant, other than one made on his first arrival in the Federated Malay States or in the Colony, may be executed either before the Controller or before a Magistrate: provided that if it be executed before a Magistrate it be sent to and confirmed within three months of its execution by the Controller who, before such confirmation, shall personally ascertain that the immigrant is fully aware of the terms to which he has agreed, and shall certify at the foot thereof accordingly.

Subsequent contracts may be executed before Controller or a Magistrate.

Period of
service.

64. (i) The contract to be entered into by an immigrant may be for an indefinite period determinable by either the employer or the immigrant on a month's notice, either oral or in writing, or may be for a definite number of days' work not exceeding six hundred days, and in the case of an immigrant who has received a free passage from India under a promise to enter into a contract shall be for six hundred days' work unless a shorter term is agreed upon by the parties to the contract.

(ii) If an immigrant whose contract is for a definite number of days' work is compelled to absent himself from work on account of illness (not caused by his own misconduct) during the continuance of the contract, he shall be entitled to count as working days any number of days during which he has so absented himself not exceeding a number bearing to the number of days for which he has contracted to labour the proportion of one to ten.

(iii) In no case shall the contract of a statute immigrant remain in force, or a statute immigrant be compellable to remain on any place of employment, for a period exceeding three years.

(iv) The employer shall within the first day of each week post up, and keep posted up for at least twenty-four hours in conspicuous places in or about the place of employment and in the lines a list in English and some other language understood by the labourers of the number of days' task work which have been performed by each labourer on the place of employment in the preceding week, together with the total number of days' work which have been performed by such labourer under his contract up to date.

Penalty.

(v) An employer neglecting to comply with the provisions of sub-section (iv) shall be liable to a fine of twenty-five dollars.

Rates of wages
and scales of
rations.

65. (i) It shall be lawful for the Chief Secretary to Government from time to time, by notification in the *Gazette*, to fix in the currencies of British India and the Federated Malay States the minimum rate of wages to be paid and the scale of rations to be issued to immigrants who enter into a contract under this Enactment, not being less than the rates fixed by sub-section (ii). In any such notification the Chief Secretary to Government may fix such minimum rate in the currency of British India and may prescribe the sum in the currency of the Federated Malay States to which such minimum rate shall be deemed to be equivalent for the purposes of such notification.

Minimum
rates.

(ii) Until any such notification shall come into force it shall not be lawful to make a contract under this Enactment with an immigrant for wages and rations at less than the following rates:

For an adult male ... 5 annas per working day and rations according to the scale set out in the fourth schedule, to be supplied whether work be done or not.

For an adult female or for a boy under 18 and above 15 years of age ... 3 annas per working day and rations according to the scale set out in the fourth schedule, to be supplied whether work be done or not.

Provided that .

- (a) the Controller shall have power, in his discretion, at the request of the immigrant to grant exemption from the supply of rations according to the prescribed scale and to order in lieu thereof the daily issue to such immigrant of a ration ticket exchangeable for food-stuffs to the value of 2 annas, or the daily payment to such immigrant of the equivalent of 2 annas in cash ;
- (b) no ration ticket or cash in lieu of rations shall be issued to an immigrant except in respect of a working day, and that the value of all rations issued to an immigrant in respect of a day on which he does not perform a day's work may be deducted from the wages due to him.

Provisos.

(iii) Every employer shall on the written requisition of the Controller supply to all or any immigrants employed by him not being contract labourers, as the Controller may require, rations according to the prescribed scale at the prescribed prices, and such rations shall so long as the Controller's requisition is in force be supplied whether work be done or not, and the value thereof may be deducted from the wages of the immigrants to whom such rations have been supplied.

Supply of food to non-contract labourers.

(iv) Children between 12 and 15 years of age living with and dependent on a contract labourer shall, if they labour, receive wages at not less than three-quarters of the minimum rate for adult females and full rations according to the prescribed scale.

Children of contract labourers.

(v) Children under 12 years of age living with and dependent on a contract labourer shall, if they labour, receive wages at not less than one-half of the minimum rate for adult females and three-quarters rations according to the prescribed scale.

Children of contract labourers.

(vi) Children under 10 years of age living with and dependent on a contract labourer shall receive rations at the rate of one-third of the prescribed scale for adults : provided always that the employer shall be entitled to recover from the immigrant by monthly deductions from his wages the cost of rations for any number of children in excess of three.

Children of contract labourers.

(vii) If a contract labourer is accompanied by any adult dependent whose passage from India has been paid by the employer and who has not entered into a contract under this Enactment, the passage money of such dependent may be recovered by the employer by monthly deductions from the wages of such contract labourer : provided that no such deduction shall be made from the wages earned during the first 150 days of the contract and that at no time shall the deduction in any one month be so great as to reduce the sum actually received as wages by the immigrant to an amount of less than 12 cents per working day in the case of an adult male or 8 cents per working day in the case of an adult female or boy under 18 years of age together with rations in accordance with the prescribed scale.

Adult dependent.

(viii) Except as aforesaid no deductions shall be made from the wages of any contract labourer in respect of passage money or advances, and every contract labourer who has worked six hundred days under this Enactment or who if the contract be for any less number of days

Limitation of liability for advances.

than six hundred has performed the full number of days for which he has contracted, or in any case if he has remained three years in the service of the employer with whom he has contracted or of any employer to whom he may have been transferred, shall be deemed to have paid all sums due from him in respect of passage money and advances.

Registration of
immigrants
locally engaged.

66. (i) Every employer who within the Colony, the Federated Malay States, or any other State of the Malay Peninsula under the protection of His Britannic Majesty engages an immigrant to labour on a place of employment at any of the employments mentioned in section 150, or at any other work or labour declared under the provisions of the said section to be subject to the provisions of Chapter XIII, shall ascertain the name and the particulars of the last employment of such labourer, and shall within seven days present or forward to the Controller, a statement in duplicate in the form provided by the third schedule together with a fee of one dollar which shall be paid to the Indian Immigration Fund. A register of such statements shall be compiled by the Controller, and such register and statements shall be open to inspection at the office of the Controller by any person at all reasonable times.

Penalties.

(ii) Any employer engaging a labourer in contravention of the provisions of sub-section (i) shall on the complaint of any other employer be liable, on conviction, to a fine not exceeding one hundred dollars in respect of every labourer so engaged by him.

(iii) Any employer knowingly furnishing any false particulars in a statement required by sub-section (i) shall be liable, on conviction, to a fine not exceeding five hundred dollars in respect of each labourer regarding whom he shall be proved to have furnished such false particulars.

(iv) Any labourer furnishing false particulars to an employer for the purposes of a statement required by sub-section (i) shall be liable, on conviction, to a fine not exceeding fifty dollars or to imprisonment for a term not exceeding three months.

Inspector of
Madras
Government to
have powers of
inspection, etc.

67. The officer from time to time deputed, with the concurrence of the Governor of the Straits Settlements, by the Government of Madras to examine and report to that Government the condition of immigrants in the Federated Malay States may exercise under this Enactment all or any of the powers of entry, inspection, enquiry and investigation which are conferred on the Controller by this Enactment.

PART III.

GENERAL PROVISIONS RELATING TO LABOUR.

CHAPTER VI.

AGREEMENTS.

Term of
agreement.

68. (i) An agreement may be entered into for any period not exceeding one month, or for any number of days' work not exceeding thirty or for the performance of any specified piece of work. All agreements shall, subject to any stipulation to the contrary, terminate on the last day of the term agreed upon or upon the completion of the specified number of days' work or piece of work, as the case may be: provided that any labourer who continues to work after the termination of an agreement entered into by him shall be presumed

Proviso.

to have entered into a fresh agreement upon the same terms and conditions as those of the former agreement unless such labourer shall have previously given notice in accordance with the provisions of this Enactment.

(ii) In the absence of proof to the contrary all agreements shall be presumed to be for a period of one month. Presumption.

69. (i) Either party to an agreement may terminate such agreement by giving to the other party a month's notice (or in the case of domestic servants fourteen days' notice) of his intention so to do. Termination of agreement by notice.

(ii) Such notice may be either verbal or written and may be given at any time, and the day on which notice is given shall be included in the period of the notice. Method of giving notice.

(iii) When notice has been given there shall be paid to the labourer on the date of the expiration of the notice all wages then due to him.

70. Wages earned by a labourer under an agreement shall become payable upon the termination of such agreement: provided that when the parties to an agreement enter into a fresh agreement as provided by section 68 the wages due under the prior agreement shall be payable not later than ten days after the expiration of such prior agreement. Wages when payable.

71. It shall be lawful for either party to an agreement to terminate the same without notice upon payment to the other party of a sum equal to the amount of wages which would have accrued to the labourer during the term of such notice. Termination of agreement without notice.

72. When an agreement is terminated by the employer without notice to the labourer, on the ground of misconduct, such labourer shall, subject to any order which may be made by the Court on complaint of either party, be entitled to receive wages only up to the day on which the agreement was terminated. Wages payable upon the termination of an agreement without notice.

73. In the event of any dispute arising between the parties to an agreement concerning wages due thereunder, or concerning the termination of the same, it shall be lawful for the Court, in addition to any other adjudication, to order either party to forfeit to the other party a sum not exceeding the amount of thirty days' wages. Disputes regarding wages.
Order of Court.

CHAPTER VII

CONTRACTS.

74. No engagement to labour for a period exceeding one month, or for more than thirty days' work, shall be valid unless it be in writing and be made in the manner hereinafter prescribed. Contract to be in writing.

75. (i) Every contract to labour shall except where herein otherwise expressly provided Contracts.

(a) be to labour for a certain number of days which shall not exceed three hundred ; Term.

(b) be in a form approved by the Chief Secretary to Government for any class or description of labourers with such additions and alterations as the Secretary for Chinese Affairs or the Controller may allow ; Form.

Explanation.

(c) be explained and (if necessary) interpreted to the labourer and to the employer by the Secretary for Chinese Affairs or by the Controller or by a duly authorised officer of their respective departments: provided that the Secretary for Chinese Affairs or the Controller or such officer may, at his discretion, dispense with any explanation or interpretation to an employer who signs his name in European characters;

Signature.

(d) be signed in the presence of the Secretary for Chinese Affairs or the Controller or such officer by the labourer and by the employer or his duly constituted attorney, or by such other agent as the Secretary for Chinese Affairs or the Controller or such officer may permit: provided that an employer signing in European characters whose signature is known to the Secretary for Chinese Affairs or the Controller or such officer need not sign in his presence;

Certificate of officer.

(e) bear the certificate of the Secretary for Chinese Affairs or the Controller or such officer that the contract has been explained and (if it has been interpreted) interpreted to the labourer or to the parties, as the case may be, and that such officer is satisfied that the terms thereof are understood by the parties.

Stamp duty.

(ii) Every contract shall be chargeable with such stamp duty as may be fixed by the Chief Secretary to Government by rules made under this Enactment.

Duplicate to be given to immigrant.

(iii) A duplicate or translation of every contract shall be signed by the employer and shall be delivered to every labourer who is a party thereto.

Contracts made outside the Colony or Federated Malay States.

76. (i) A contract to labour entered into by a labourer outside the Colony or the Federated Malay States shall not be binding on a labourer who is a party thereto unless

(a) it shall have been signed in the case of a contract executed in Hongkong before an officer of the Registrar-General's Department; or in the case of a contract executed in some other part of China before an officer of His Majesty's Consular Service; or in the case of a contract executed elsewhere before such person as the Chief Secretary to Government may, by a notification in the *Gazette*, declare to be authorised to witness the signature of contracts under this Enactment;

(b) it is in conformity with the provisions of sub-section (i) of section 75: provided that references in clauses (c), (d) and (e) of that sub-section to the Secretary for Chinese Affairs or to the Controller or to officers of their respective departments shall for the purposes of this clause be deemed to be references to any such officer as is mentioned in clause (a) of this sub-section;

(c) the advances, if any, thereby acknowledged to have been received or promised to be repaid do not exceed the sum fixed under section 28 as the maximum sum for which a labourer shall be indebted for passage money and advances;

- (d) a duplicate or translation thereof signed by the employer has been given to the labourer ;

and shall cease to be binding on such labourer if it be not produced or sent by registered post by the employer or his agent within two weeks from the arrival of the labourer in the Federated Malay States to the Controller.

(ii) The Controller to whom any contract is produced or sent under sub-section (i) shall, on being satisfied that it was duly executed, countersign it, and may for the purpose of so satisfying himself direct the employer to produce the labourer before him. Signature by Controller.

(iii) Every such contract shall be registered in the office of the Controller and shall, on registration, be chargeable with a stamp duty of ten cents in respect of each labourer to be paid by the employer by means of adhesive stamps. Stamp duty.

77. (i) If any labourer whose contract is for a definite term shall be able and desirous to redeem the unexpired portion of his contract, he may request his employer to take him or allow him to go before the Controller who, upon receiving a sum equal to the value of the unexpired portion of his contract, together with any sum which may have been expended by his employer in respect of passage money for him and any adult dependent upon him and cash advances paid to such labourer, shall forthwith give notice of such receipt to the employer of such labourer and, unless such employer shall within one week from the date of such notice satisfy the Controller that there is some sufficient reason why such labourer should not be allowed to redeem such portion as aforesaid, the contract shall determine as from the date of such receipt. The Controller shall endorse a memorandum of such determination on the contract, which shall be given up to him for that purpose, and shall pay the amount so received by him as aforesaid to the employer. Redemption of contract.

(ii) Every employer shall be bound within a reasonable time after request by a labourer to furnish him with an account showing what moneys (if any) are due by such labourer to the employer for advances. Employer to furnish account.

(iii) The value of the unexpired portion of a contract under this Enactment shall be calculated in the following manner : Value of unexpired portion.

The number of days' work which the labourer has done will be deducted from the number of days' work which are required by the contract, and the remainder shall be deemed to be the unexpired portion of the contract and shall be valued at the rate of two dollars for every thirty of such days or fractional part thereof.

Provided —

(a) That the value of the unexpired portion of the contract shall not be less than ten dollars, in cases when such value calculated as above would be less than ten dollars ; Provisos.

(b) That it shall be lawful for the Chief Secretary to Government from time to time, by notification in the *Gazette*, to vary the conditions upon which any class of labourers may redeem the unexpired portion of their contracts. Variation of rates.

Female
labourers.

- (c) That whenever it appears to the Controller that any female labourer tendering the required sum in redemption of the unexpired portion of her contract is in the custody or control of any other person he may refuse to accept such sum or to permit such unexpired portion to be redeemed unless and until the person in whose custody or control such female labourer appears to be has given reasonable security to the satisfaction of the Controller that such female labourer shall not leave the Federated Malay States without the previous consent in writing of the Controller and shall not be disposed of as a prostitute or for immoral purposes and that she shall be produced before the Controller whenever he so requires.

Penalty for
non-compliance
with section.

- (iv) Any employer who omits to comply with such request as is mentioned in sub-section (i) or to furnish the account required by sub-section (ii) shall, in the absence of proof that such omission was accidental, be liable to a fine not exceeding two hundred dollars and to an additional fine not exceeding fifty dollars for each day during which such omission is continued.

Termination of
contracts.

78. A contract may be determined

- (a) by the Court or the Controller on proof that either party has failed to carry out any material obligation imposed upon him, either by his contract or by this Enactment, or upon proof that either party has become permanently incapacitated from fulfilling his contract, or that the labourer has been grossly neglected or illused by the employer;

- (b) with the approval of the Controller by mutual consent:

Proviso.

Provided that such determination shall not operate to relieve the employer from any liability under this Enactment for the space of three months from the date of the determination of the contract. Every such consent and approval shall be endorsed on the contract by the person giving such consent or approval.

Cancellation of
contract by
Court.

79. If any employer or any person placed by the employer in authority over or in charge of any labourer who has entered into a contract to labour for the employer is convicted before any Court of any offence against the person or property of such labourer, or if a Magistrate shall on the report of the Controller and after due enquiry upon oath in the presence of the parties find that any such labourer has been compelled to perform any work which he was unfit for or has been subjected to ill-usage by such employer or other person as aforesaid, the Court may cancel the contract of such labourer and award him reasonable compensation and shall certify such cancellation to the Controller.

Contract may
be cancelled for
repeated deser-
tions at request
of the employer.

80. (i) Whenever any contract labourer shall have actually suffered imprisonment, amounting in the whole to six months, for desertion from his employer's service, the Controller shall at the written request of the employer cancel the contract of such contract labourer.

Effect of
cancellation.

(ii) Every such cancellation shall be certified by the Controller on the back of the contract, and such contract labourer shall be liable to work during the remainder of the term of the cancelled

contract on such public works as the Resident of any State may direct at the same rate of wages as named in such contract.

(iii) If the services of any such labourer shall not be required by the Government, the Controller shall take such steps as may be proper, subject to the provisions of this Part, for securing employment for such labourer if applied to by him for that purpose. Alternative.

81. Any contract under this Enactment may, with the consent of the labourer and the approval of the Controller, be transferred by the employer to any other employer or to any other place in the Colony or the Federated Malay States or Johore. A note of such transfer shall be endorsed upon the contract by the Controller. Transfer of contracts by consent.

82. Whenever any contract labourer shall have been twice convicted of offences under this Enactment the Controller, on the application of the employer or of his own accord, may in his absolute discretion transfer the contract of such contract labourer to some other employer willing to accept the same upon such terms and conditions between the old and new employers as shall appear to him reasonable. Controller may transfer contracts.

83. Every contract labourer who has completed his contract shall be entitled to appear forthwith before the Controller, in order that the completion of the contract may be registered. Completion of contract.

84. If a contract labourer is bound by the terms of his contract to repay to his employer the amount of any specified advances made to him, or on his behalf, previous to or at the time of his executing such contract, and if on the completion of the term of such contract the balance of wages due to such labourer, after deducting all sums authorised by this Enactment to be deducted and all sums ordered by any Court or by the Controller to be paid by the labourer, shall be insufficient to repay such advances, then the period of time or the number of days' work for which such contract was made shall be deemed to be extended, and the contract shall remain in force and of full effect until the whole of such advances shall have been repaid: provided that no such contract shall under any circumstances be extended so as to have effect after the expiration of two years from the date thereof. Contract may be extended if advances are not repaid.

85. The wages of a contract labourer shall, unless otherwise stipulated in his contract, become due and payable not later than the tenth day of each month in respect of the month or portion of a month last preceding, and at the termination of such contract all wages due shall immediately become payable. Wages when payable.

86. In cases of neglect to labour and unlawful absence no day on or during which such neglect or absence takes place shall be reckoned as a day on which a day's work has been performed and no wages shall be payable in respect of such day. No wages for days of neglect or absence.

87. It shall be lawful for a contract labourer, whose contract is for a period of time, to absent himself from work, without any deduction from his wages, for not more than two days in each month, and also upon those days customarily observed as holidays by persons of his race and religion working in the Federated Malay States: provided that the total number of days of such absence shall not exceed five days in any one month except with the consent of the employer, and provided further that a labourer who, on any day other than a Holidays.

Provisos.

recognised holiday, absents himself from work in conjunction with others in such a manner as to cause delay or stoppage of the work on which he is employed, shall be deemed to have committed a breach of the provisions of section 230.

Disputes concerning wages.

88. In the event of any dispute arising between the parties to a contract concerning wages due thereunder, or concerning the termination of the same, it shall be lawful for the Court, in addition to any other adjudication, to order either party to forfeit to the other party a sum not exceeding the amount of thirty days' wages.

When the result of immorality.

89. (i) If the absence from work of a contract labourer for any period is certified by a Medical Officer to be the direct result of the labourer's intemperance, immorality or wilful misconduct, a Magistrate or the Controller may endorse on the contract of such labourer, after such enquiry as may be necessary, the period of such absence.

Payment of hospital fees.

(ii) It shall be lawful for the employer to deduct from the wages of the labourer the amount of any hospital fees paid by the employer in respect of the period of absence so certified.

Absence without leave or imprisonment not to be counted as service.

90. (i) If any labourer under a contract for a period of time shall, during the continuance of such contract, have been imprisoned or shall have absented himself without leave, such period of imprisonment or absence shall be endorsed on the contract by the Court and shall not be deemed to be part of the period of his service, and he shall be compellable, at the option of his employer, to serve for the full period for which he has contracted to serve, and until such extended service be completed he shall be subject to the provisions of this Enactment.

Endorsement of contract.

(ii) The period of every such imprisonment or absence without leave shall be endorsed on the contract by the Court before whom the labourer may be sentenced to imprisonment or proved to have been absent without leave, or by any other Court before whom the fact and duration of imprisonment or absence without leave may be proved, and such period may include the whole or any portion of the time during which the labourer is detained in a lock-up, as the Court may direct.

Release of imprisoned contract labourer on application of employer.

91. On the application of the employer, or of any person authorised to act for the employer, of any contract labourer imprisoned for any offence under this Enactment, the Court or Controller may at any time previous to the expiration of such imprisonment, if he see good cause, order such contract labourer to be released and given up to his employer, and in that case the Court or Controller shall endorse on the contract a memorandum signed by him of such order, and any Court signing such memorandum shall send a copy thereof to the Controller.

Disposal of contract labourer after release.

92. On the determination of any imprisonment to which a contract labourer may have been sentenced it shall be the duty of the officer in charge of the prison to make him over to any person appointed by his employer to receive charge of him or, on the request and at the expense of the employer, to return him to the place of employment under charge of the police.

Conviction to be endorsed on contract.

93. Whenever a contract labourer is convicted of any offence, the Court before which such conviction is had shall endorse on the contract a memorandum of the conviction, and any Court endorsing such memorandum shall send to the Controller a copy thereof.

94. Whenever a contract labourer is ordered by the Court, or by the Controller, to forfeit any moneys to his employer, the Court or the Controller shall endorse upon the contract a memorandum of such order. Endorsement of forfeiture.

95. (i) On the application of any employer to the Controller that a contract labourer may be photographed for future identification it shall be lawful for the Controller to direct that such contract labourer and, if it shall appear necessary to him, such employer be photographed at such time and in such place and manner as the Controller may think fit, and the photograph of any such contract labourer or employer shall be endorsed with the signature and seal of the Controller before return to the employer, and one copy of such photograph shall be filed in the office of the Controller. Photographing contract labourers and employers.

(ii) Any expenses incurred under sub-section (i) shall be borne by the employer.

CHAPTER VIII.

GENERAL.

96. Except where otherwise expressly provided no male person under the age of sixteen years and no female person under the age of fifteen years shall be deemed to be competent to enter into an agreement or contract under this Enactment. Contractual age.

97. No labourer shall be bound, in or by virtue of any agreement or contract made under this Enactment, to answer for the debt, default, or miscarriage of another person, so as to give any remedy under this Enactment for a breach of such agreement or contract as to such debt, default or miscarriage. Labourer not liable for default of another.

98. No labourer shall be held to be liable for the amount of any advances made to him or on his behalf, or of any moneys expended on his behalf, prior to his arrival in the Federated Malay States, in consideration of his engagement to labour within the Federated Malay States, unless he shall, either before his arrival in the Federated Malay States or thereafter previous to his proceeding from the port of arrival to his place of employment, have executed a contract in accordance with the provisions of this Enactment acknowledging such liability. Liability of labourer for advances.

99. Subject to any provisions to the contrary contained in his contract, if any : Days and hours of labour.

(i) No labourer shall be bound to work on more than six days in one week, or more than six consecutive hours, or (subject as hereinafter mentioned) more than nine hours a day of actual labour.

(ii) If any labourer works for and at the request of his employer more than nine hours in any one day, he shall be paid for such extra work at the rate of not less than one-eighteenth part of his ordinary daily wages for each half hour of overtime work. Overtime.

(iii) It shall at all times be lawful for the employer to require from a labourer over and above the work which he is bound to perform as aforesaid any reasonable and customary labour for Cleaning up.

(a) the care of animals ;

(b) the cleaning of machinery ;

(c) the maintenance of machinery in an efficient condition ;

(d) the observance of sanitary regulations.

Overtime in case of factory work.

(iv) Any labourer who is employed exclusively in factory work may be lawfully required by the employer, in case of need, to work for any time not exceeding three hours in any one day over and above the nine hours hereinbefore mentioned, and shall be entitled to receive for such extra work pay at the rate of not less than one-eighteenth part of his ordinary daily wages for each half hour of overtime work.

Task work.

100. (i) It shall be lawful for the employer to assign tasks to be performed by labourers as equivalent to work for a day of nine hours. Such assignment of tasks shall be subject to revision by the Controller who may fix the number of days' work to be credited to the labourers who have performed such tasks. A schedule of such tasks as revised by the Controller shall be written in English and some other language understood by such labourers and signed by the Controller, and copies thereof shall be kept fixed up in conspicuous places in or about the place of employment and in the lines, so that the same may be made known to such labourers.

Double task work.

(ii) After performing his task for the day the labourer shall be at liberty, if he pleases, to commence and carry on a fresh task.

Compulsory task work.

(iii) The employer may, whenever he thinks fit, direct the labourer to perform a task instead of working by the day, and the performance of such task shall, for the purposes of this Enactment or of any contract thereunder, be equivalent to working for a day, but so that no labourer shall be compelled to work for more than nine hours in any one day.

Wages at agreed rate.

(iv) Nothing in this Enactment contained shall prevent any employer from agreeing with any labourer in his employ that the wages of such labourer shall be paid at an agreed rate in accordance with the amount of work done and not by the day.

Periods on account of which wages are not payable.

101. No wages shall become payable to or recoverable by any labourer for or on account of the term of any sentence of imprisonment undergone by him, or for or on account of any period spent by him in going to or returning from prison, or for or on account of any period spent by him in going to, attending before, or returning from a Court in or about a case in which he shall have been convicted of an offence, or in respect of which the Court before which the case is tried certifies that such attendance was not necessary for the ends of public justice.

Dispute as to work done.

102. Any dispute between a labourer and his employer as to whether the work done by such labourer on any specified day shall be counted as a day's work may be referred to the Controller whose decision shall be final.

Supply of food.

103. Every employer, who has agreed or contracted with a labourer to supply him with food free of charge, shall supply the same on all holidays and other days upon which such labourer is entitled to absent himself from work.

Employer may deduct cost of food.

104. If any labourer absent himself from work otherwise than as provided by this Enactment or by his contract (if any), it shall be lawful for the employer, subject to any order which may be made by the Court or by the Controller on complaint of either party, to deduct from any wages due to such labourer the cost of the food supplied to him during such absence.

105. (i) The Controller may, with the sanction of the Chief Secretary to Government, from time to time order that all labourers employed by any employer shall so long as they continue to be employed by him be supplied with cooked or uncooked rations of such quality and at such price as the Controller may with the like sanction order. Controller may order supply of rations by employer.

(ii) The Controller may with the like sanction from time to time prescribe the price of food-stuffs to be exchangeable for ration tickets. Ration tickets.

(iii) Any employer who shall omit to comply with any order made under this section shall be liable to a fine not exceeding two hundred dollars and to an additional fine not exceeding fifty dollars for each day during which such omission is continued. Penalty.

106. The Controller or a Medical Officer may at any time require the employer of any labourer to provide for him cooked rations, which shall be in accordance as to quantity and quality with the scale for native patients for the time being in force in Government hospitals; and the Controller may further require any such employer to employ a cook or cooks selected by him to prepare such cooked rations. Cooked rations.

107. (i) The Controller, the District Officer and Medical Officer shall have power to enter at all reasonable times upon any estate, factory, mine or place in which labourers are employed, and to put questions concerning such labourers to their employer or to any person who may be in charge of them, or to the labourers themselves, and the employer or such person, or any such labourer, shall be legally bound to answer such questions truly to the best of his ability. Government inspections.

(ii) If on such inspection the Controller or other inspecting officer shall have reasonable ground for suspecting that any offence has been committed against a labourer, and whenever any complaint of personal ill-usage or breach of any of the provisions of this Enactment is made to the Controller, the Controller or other inspecting officer, as the case may be, may forthwith remove, or cause to be removed, such labourer from the estate, factory, mine or place of employment where he is employed for further enquiry into the matter; and if the labourer has entered into a contract with the employer may, at his discretion, cause such labourer to be detained, if necessary, until the conclusion of such enquiry, at the nearest police station or at any other place that may appear to such officer suitable for the purpose. Powers of an inspecting officer.

108. The Controller and every such District Officer and Medical Officer shall have power to call for and inspect all contracts, registers, books of account and other documents concerning any labourers or relating to their employment; and any employer who without reasonable excuse, the proof of which shall lie upon him, neglects or refuses to produce the same, shall be liable, on conviction, to a fine not exceeding two hundred dollars. Inspection of documents.

109. (i) Every employer of more than ten labourers shall keep in a safe and accessible position on the estate where such labourers are employed an Estate Inspection Report Book. Inspection Report Book.

(ii) Every employer who neglects or refuses to comply with the requirements of sub-section (i) shall be liable, on conviction, to a fine not exceeding one hundred dollars. Penalty.

Inspection of labourers to be made by the Controller.

110. The Controller accompanied by a Medical Officer, unless he be himself a Medical Officer, shall once within each of such periods as may be fixed for such purpose by the Chief Secretary to Government and may, in addition, whenever he thinks fit, whether accompanied by a Medical Officer or not, visit all places of employment on which any labourers shall reside or be employed and inspect every house, hospital, tent, camp or building in any way used by any labourers and enquire into the condition of such labourers and investigate the books of account of their wages; and for such purpose the Controller may require the employer to produce before him all or any of the labourers then under contract or agreement with him, together with all contracts and books of accounts of wages, and to answer such questions relating thereto as the Controller may think proper to ask.

Registers of mandors.

111. (i) It shall be lawful for the Controller at any time to direct any employer of labourers to keep a register, in such form as the Controller prescribes, of all headmen, kanganis or mandors employed by him to supervise the work of any labourers, and to direct that such headmen, kanganis or mandors shall be photographed in such place and manner as he thinks fit, and that a copy of any such photograph be affixed to such register, and it shall be lawful for the Controller, in the event of any such headman, kangani or mandor being convicted of ill-treating any labourer, to order the employer to dismiss him from his service.

Penalty.

(ii) Any person acting in contravention of any direction or order given under the provisions of sub-section (i) shall be liable, on conviction, to a fine not exceeding fifty dollars or to imprisonment of either description for any term not exceeding three months.

Register of labourers.

112. It shall be lawful for the Controller to require any employer to keep a register of labourers in a prescribed form.

Returns to be made by employer.

113. (i) Every employer shall, within the first fourteen days of the months of January, April, July and October in each year, forward to the Controller a return in such form or forms as may be approved by the Controller, giving the particulars prescribed thereby.

(ii) Every such form shall be published in the *Gazette*. Copies of such forms shall be supplied to employers free of charge on application to the Controller.

Report in cases of death.

114. It shall be the duty of every employer to make a report of the death of any labourer in his employment to the nearest police station, or to the Penghulu, within twenty-four hours after such death shall have taken place.

Penalty for failure to keep register, forward returns or make report of death.

115. (i) Every employer who shall fail to keep the register prescribed in pursuance of section 112 or to forward such returns as are prescribed in pursuance of section 113 or to make the report required by section 114 shall be liable, on conviction, to a fine not exceeding two hundred dollars for every such failure.

Certificate by Controller.

(ii) A certificate under the hand of the Controller stating that such returns have not been forwarded or are incorrect shall be sufficient *primâ facie* evidence of the truth of the facts stated in such certificate.

Power of summons.

116. (i) Whenever the Controller has reasonable grounds for suspicion that any offence under this Enactment has been committed

by an employer against a labourer or by a labourer against an employer, or whenever the Controller wishes to enquire into any matter concerning disputes as to wages, desertions, malingering, misconduct, food, medical attendance, deaths, mining usage and mining complaints, Government inspections, crimping, sanitation or any other matter relating to employer and labourer dealt with under the provisions of this Enactment, it shall be lawful for the Controller to summon any person who he has reason to believe can give information respecting the subject matter of the enquiry, and the person so summoned shall be legally bound to attend at the time and place specified in the summons and to answer truthfully all questions which the Controller may put to him.

(ii) Any person who in any way wilfully obstructs the service of or obedience to such summons, and any person summoned who neglects to attend as required in such summons, and any person who commits in respect of any such complaint or enquiry any offence described in Chapter X of the Penal Code, shall be punished as provided in Chapter X of the Penal Code.

Penalty for obstruction.

117. If any labourer states to his employer, or to any person acting for such employer in the conduct of the business of the place of employment, that he desires to make a complaint to the Controller of personal ill-usage or breach of any provision of this Enactment on the part of such employer or any other person, the employer or person to whom such statement is made shall within forty-eight hours send notice thereof in writing to the Controller, and in default of so doing such employer or person shall be liable to a fine not exceeding one hundred dollars, and in addition to a fine not exceeding twenty-five dollars for each day during which such default is continued.

Employer to give notice to Controller if immigrant wishes to complain.

118. If upon any such enquiry made on the complaint of a labourer the Controller is of opinion that the complaint is untrue or frivolous, he shall enter in his book the particulars of such complaint and a short statement of the grounds of his opinion respecting it, and in such case he may impose on the complainant a fine not exceeding two dollars and fifty cents, which may be deducted from the labourer's wages and retained by his employer.

If complaint is untrue or frivolous.

119. (i) If, upon enquiry as aforesaid, the Controller is of opinion that the complaint is well-founded, he shall institute such proceedings, civil or criminal, for and in the name of the labourer as he shall deem necessary under the circumstances.

If complaint well-founded.

(ii) In the event of there being more labourers than one making a similar complaint the Controller may if he shall institute civil proceedings for and in the name of such labourers consolidate the complaint of all such labourers into one cause of action and he shall only be required to sue out one plaint for and in the name of all such labourers in respect of such causes of action. Judgment may be given without any amendment for such one or more of the plaintiffs as may be found to be entitled to relief for such relief as he or they may be entitled to.

Consolidation of causes of action.

120. No Court fees shall be chargeable in the first instance on any proceeding commenced by a labourer, or by the Controller on his behalf, against his employer under this Enactment; but in case a conviction shall be had or judgment given against the employer, the

Costs of proceedings.

same shall be paid by the employer, together with the general costs of the proceeding.

Labourer may
be taken before
Court.

121. (i) Whenever an employer desires to make a complaint against any labourer in his employment under an agreement or contract for any of the following offences, that is to say—

Disobedience to lawful orders, neglect of duty, carelessness in regard to property, wrongful determination of an agreement of service or neglect or refusal to fulfil or to enter on or commence service ;

it shall be lawful for the employer, if such labourer is on the estate or place where he is bound by his agreement or contract to work, to apprehend and forthwith take such labourer before any Court.

Compensation.

(ii) If it appears to the Court before whom a labourer is brought that there was no sufficient ground for apprehending and bringing such labourer before him, or that such labourer was, through the neglect or default of the employer, detained an unnecessary length of time, it shall be lawful for the Court to award to such labourer by way of compensation any sum not exceeding ten dollars, to be paid by the employer.

Labourer unfit
for particular
work.

122. (i) If any labourer proves physically unfit and unable to perform the work that he has undertaken to perform, it shall be lawful for the Controller to order that such labourer be given such other work or task in place of that which he has proved unfit and unable to perform as the Controller, after consultation with the employer, shall deem reasonable and just.

Penalty.

(ii) If any employer shall compel any labourer to perform any work which the Court or the Controller has directed that he shall not be bound to perform, he shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding one hundred dollars.

PART IV.

PROVISIONS RELATING TO SPECIAL CLASSES OF LABOUR.

CHAPTER IX.

LABOUR WORKING BOARD AND SCHEDULE OF LABOUR LAWS FOR CHINESE LABOURERS.

Employer to
exhibit a
working board
on estate.

123. A “Kung-pai” (工牌) or working board shall be affixed in some conspicuous position on each place of employment or on the lines thereof, and on such working board shall be entered by the employer, at intervals not exceeding two days, the amount of tasks done or length of time worked on each day by each labourer, and the amount of all work done overtime.

Employer to
provide
account book.

124. (i) Every employer shall, at the time of making a contract, supply free of charge to each contract labourer a “Tshun-tu” (寸楮) or Chinese pocket account book which shall be the property of such labourer, in which shall be entered, in Chinese or in English, by the employer or his agent the following particulars—namely, the name, age and place of birth (giving the name of the district in

China) of such labourer, together with the registered number, the date, and the duration of his contract, the rate of wages payable thereunder, and the amounts of all other emoluments and of any advances that may have been made to the labourer:

(ii) The employer or his agent shall, at the time of payment, enter in such "Tshun-tu," in the Chinese language, the amount paid to such labourer as wages during his contract, and the date of payment, and shall at the end of every month enter the amount earned by such labourer, either as wages or as payment for work done overtime, together with such further details as the Controller may from time to time direct.

Entries in
account book.

125. (i) Any employer failing to comply with the provisions of section 123 or section 124 shall be liable, on conviction, to a fine not exceeding twenty-five dollars.

Penalty for
breach of
section 123
or 124.

(ii) Any employer or clerk, overseer, servant, or agent of any employer who shall detain or take away from any labourer the "Tshun-tu" (寸楮) or Chinese pocket account book referred to in section 124 shall be liable, on conviction, to a fine not exceeding one hundred dollars.

126. Sections 123 and 124 shall not apply to labourers on mines.

Limitation of
sections.

127. (i) An abstract of Chinese labour law shall, as soon as conveniently may be after the passing of this Enactment, be prepared and published in the *Gazette*, and every employer who employs not less than ten Chinese contract labourers shall affix and exhibit continuously in a conspicuous place in all lines a translation thereof in Chinese.

Translation of
abstract to be
posted in cer-
tain cases.

(ii) Every employer who employs not less than one hundred Chinese labourers shall affix and exhibit continuously in a conspicuous place in all lines a translation in Chinese of the said abstract.

(iii) Printed copies of the said abstract, with such translations as may be necessary, shall on application be supplied free by the District Officer or the Controller to all such employers as are referred to in sub-sections (i) and (ii).

(iv) Every employer who refuses or neglects to comply with the provisions of sub-section (i) or sub-section (ii) shall be liable, on conviction, to a fine not exceeding one hundred dollars.

Penalty.

CHAPTER X.

DOMESTIC SERVANTS.

128. The provisions of Chapter VI and Chapter VII are hereby made applicable to domestic servants.

Application.

129. Any domestic servant who shall without reasonable excuse to be allowed by the Court

Offences.

(a) quit the service of his employer without due notice;

(b) be guilty of wilful negligence or carelessness with regard to the property in his custody or control;

shall be liable, on conviction, to a fine not exceeding twenty-five dollars or to imprisonment of either description for a term not exceeding one month.

Penalty.

PART V.

PROVISIONS RELATING TO PRIORITY OF WAGES
AND THE TRUCK SYSTEM.

CHAPTER XI.

PRIORITY OF LABOURERS' WAGES.

- Interpretation. **130.** In this Chapter unless the context otherwise requires :
- “ Court.” (i) “ The Court ” includes a Collector or Assistant Collector duly appointed under the Land Enactment, 1911, in any case in which such Collector or Assistant Collector has power to order a sale.
- “ Declaration of insolvency.” (ii) “ Declaration of insolvency ” includes an order or decree for the liquidation or winding up of a corporation or company.
- “ Labourer.” (iii) “ Labourer ” includes clerk.
- “ Receiver.” (iv) “ Receiver ” includes the liquidator of a corporation or company.
- “ Secured creditor.” (v) “ Secured creditor ” means a person holding a mortgage, charge or lien on any mine or agricultural estate or other place of employment, or any part thereof, as a security for a debt due to him.
- “ Wages.” (vi) “ Wages ” shall not include money due as a share of profits.
- Procedure in the event of insolvency of employer. **131.** In the event of a declaration of insolvency or a receiving order in bankruptcy being made against any employer by any Court having jurisdiction in insolvency or bankruptcy matters, and of the sale by the receiver of any interest in any mine, agricultural estate or other place of employment belonging to such employer, the proceeds of such sale shall not be paid in satisfaction of any claims but those of the Government and of secured creditors unless and until the receiver shall have ascertained and provided for the amount due at the date of the sale for wages to all labourers employed on such mine, agricultural estate or other place of employment.
- Procedure on issue of warrant of execution. **132.** In the event of the issue of a warrant for the execution of a decree against any employer, and of the interest in any mine, agricultural estate or other place of employment belonging to such employer being seized and sold under such warrant the proceeds of such sale shall not be paid to any execution creditor unless and until the Court ordering the sale shall have ascertained and provided for the amount due at the date of the sale for wages to all labourers employed on such mine, agricultural estate or other place of employment.
- Procedure on sale under mortgage or charge. **133.** In the event of any interest in any mine or agricultural estate or other place of employment being sold on the application of a mortgagee or chargee under any law in force for the time being, the proceeds of such sale shall not be paid to any creditor other than the Government or a mortgagee or chargee, unless and until the Court ordering the sale shall have ascertained and provided for the amount due at the date of the sale for wages to all labourers employed on such mine, agricultural estate or other place of employment or unless the Court shall be satisfied that such wages have been duly paid up to the date of sale.

134. (i) For the purpose of ascertaining the amount so due, the Court or receiver ordering the sale under section 131, 132 or 133 (hereinafter in this section called "the Court") shall take notice of the system under which the mine, agricultural estate or other place of employment is worked, and shall not allow, in the case of a clerk or headman, more than two months' wages or less than one; and in the case of other labourers, more than three months' wages or less than one.

Mode of
ascertaining
amount due.

(ii) The Court may refer the matter to the Controller, who shall enquire into the same and report to the Court the amount that is, in his opinion, justly due for wages from the employer to the labourers.

Reference to
Controller.

(iii) The Court may adopt the report of the Controller, or may make such further enquiry as it may think fit.

Report.

(iv) After the enquiry is completed the Court shall make an order declaring the amount due at the date of the sale for wages by the employer to the labourers, and the mine, agricultural estate or other place of employment in respect of which such wages have become due.

Order by Court.

(v) In ascertaining such amount, in the case of an employer against whom a declaration of insolvency or a receiving order in bankruptcy has been made, there shall be deducted from the amount due at the date of such declaration or order any sums which the labourers may have received since such date from the assets of their employer, whether by way of dividend or in priority to the general body of creditors.

Deductions.

135. (i) Any Court having jurisdiction in insolvency or bankruptcy matters (hereinafter in this section called "the Court") may, subject to the claims of the Government or of any secured creditor, make an order for the sale of any interest in any mine, agricultural estate or other place of employment, belonging to an employer against whom a declaration of insolvency or a receiving order in bankruptcy has been made, upon the application of the receiver of such employer's estate, or of the Controller, on behalf of the labourers claiming wages in respect of work done on or about such mine, agricultural estate or other place of employment.

Orders for sale
of mine or
estate.

(ii) The moneys to arise from such sale shall be applied in the first place in payment of the costs, charges and expenses of the receiver or Controller, of and incidental to the application to the Court, and of the sale; in the second place in payment of the amount found to be due under the last preceding section to the labourers, and the surplus (if any) shall be paid to the receiver of the estate for the benefit of the general body of creditors.

Disposition of
proceeds.

136. Every transfer of a mine, agricultural estate or other place of employment made within three months immediately preceding a declaration of insolvency or a receiving order in bankruptcy against the owner of such mine, agricultural estate or other place of employment with a view of giving, or which has in fact the effect of giving, any other person a claim on such mine, agricultural estate or other place of employment in priority to the claims of labourers employed thereon shall, as against the claim of such labourers, be deemed fraudulent and void.

Transfer to be
void in certain
events.

Saving of rights of labourers.

137. No payment of wages by way of priority under this Chapter shall affect the right of the labourer receiving the same to prove, in the case of the insolvency or bankruptcy of his employer, for any balance of wages due to him and not recoverable under this Part.

CHAPTER XII.

PROVISIONS AS TO THE TRUCK SYSTEM.

Agreements to pay wages otherwise than in legal tender illegal.

138. In all agreements or contracts for the hiring of any labourer or for the performance by any labourer of any labour the wages of such labourer shall be made payable in legal tender and not otherwise, and if in any such agreement or contract the whole or any part of such wages shall be made payable in any other manner such agreement or contract shall be illegal, null and void.

Agreements as to place, manner, etc., of spending wages illegal.

139. No employer shall impose in any agreement or contract for the employment of any labourer any terms as to the place at which, or the manner in which, or the person with whom, any wages paid to the labourer are to be expended, and every agreement or contract between an employer and a labourer containing such terms shall be illegal, null and void.

Wages to be paid entirely in legal tender.

140. Except where otherwise expressly permitted by the provisions of this Enactment the entire amount of the wages earned by, or payable to, any labourer in respect of any labour done by him shall be actually paid to him in legal tender, and every payment of, or on account of, any such wages made in any other form shall be illegal, null and void.

Labourer's right to recover

141. Every labourer shall be entitled to recover in the Courts of the Federated Malay States so much of his wages as shall not have been actually paid to him in legal tender.

Interest on advances forbidden.

142. No employer shall make any deduction by way of discount, interest or any similar charge on account of any advance of wages made to any labourer in anticipation of the regular period of payment of such wages.

Deductions or payments in respect of fines, injury to materials, etc.

143. Except where otherwise expressly permitted by the provisions of this Enactment no employer shall make any deduction or make any agreement or contract with a labourer for any deduction from the wages to be paid by the employer to the labourer, or for any payment to the employer by the labourer, for or in respect of any fine, or of bad or negligent work, or of injury to the materials or other property of the employer.

Agreements of co-operation.

144. Nothing in this Chapter shall be held to apply to any body of persons working on an agreement of co-operation.

Remuneration other than wages.

145. Nothing in this Chapter shall render illegal an agreement or contract with a labourer for giving to him food, a dwelling-place or other allowances or privileges in addition to money wages as a remuneration for his services, but so that no employer shall give to a labourer any opium or chandu or intoxicating liquor by way of such remuneration.

Authority to employer to open shop.

146. (i) Nothing in this Chapter shall prevent the employer, where the place of employment is distant more than two miles from any town or village, from establishing a shop on such place of employment for

the sale of provisions to his labourers, at a tariff of prices approved by the Controller, which shall be openly exhibited in the shop and at other points of the place of employment as may be directed by the Controller, but no labourer shall be compelled by any contract or agreement, written or verbal, to purchase provisions at such shop, and no opium or chandu or intoxicating liquor shall be sold in any such shop.

(ii) No employer shall establish or keep, or permit to be established or kept, a shop on any place of employment for the sale of provisions to his labourers otherwise than in accordance with the preceding sub-section. Offence.

147. Any employer who enters into any agreement or contract or gives any remuneration for service contrary to the provisions of this Chapter or declared by this Chapter to be illegal, or makes any deduction from the wages of any labourer or receives any payment from any labourer contrary to the provisions of this Chapter or contravenes the provisions of sub-section (ii) of section 146, shall be liable, on conviction, to a fine not exceeding five hundred dollars or for a second or subsequent offence to a fine not exceeding one thousand dollars. Penalties.

148. (i) When an employer is charged with an offence against this Chapter he shall be entitled, upon information duly laid by him, to have any other person whom he charges as the actual offender brought before the Court at the time appointed for hearing the charge, and if, after the commission of the offence has been proved, the employer shall prove to the satisfaction of the Court that he has used due diligence to enforce the provisions of this Chapter and that the said other person has committed the offence in question without his knowledge, consent or connivance, the said other person shall be summarily convicted of such offence, and the employer shall be exempt from any penalty. Exemption of employer on conviction of actual offender.

(ii) When it is made to appear to the satisfaction of the Controller at the time of discovering the offence that the employer has used due diligence to enforce the provisions of this Chapter and also by what person such offence has been committed, and also that it has been committed without the knowledge, consent or connivance of the employer, then the Controller shall proceed against the person whom he believes to be the actual offender in the first instance without first proceeding against the employer. Proceedings to be taken against actual offender

PART VI.

PROVISIONS RELATING TO ASSISTED IMMIGRATION.

CHAPTER XIII.

THE INDIAN IMMIGRATION FUND.

149. The provisions of this Chapter shall only apply to Indian labourers and shall, where such provisions are repugnant to the other provisions of this Enactment, be taken to repeal for the purpose of carrying into effect this Part such other provisions, but except in so far as is necessary to give effect to this section the provisions of this Part shall be additional to, and in extension of, the other provisions of this Enactment. Limitation of application.

Interpretation.

150. In this Chapter unless the context otherwise requires :

“Employer.”

“Employer” means any person, including the Government, and any body of persons, corporate or unincorporate, who employs any Indian labourers and shall in his absence include his agent or manager or other person in charge of the work on which such Indian labourers are employed, and a person who makes payments for work executed by Indian labourers by contract or by the piece to some person other than such Indian labourers shall be deemed to be the employer of such Indian labourers if such work is done in the conduct of any trade, business, undertaking or industry carried on by him or on his behalf ;

“Indian labourer.”

“Indian labourer” means an Asiatic native of the Madras Presidency of British India of the age of fourteen years and upwards, who is employed in any of the following kinds of labour, namely—

- (1) Agriculture, including the treatment of produce and its portering to the place of treatment ;
- (2) The making and upkeep of roads ;
- (3) The construction and maintenance of canals ;
- (4) Railway construction, maintenance and working ;
- (5) The construction, maintenance and working of all works of a public nature or for the public good ;
- (6) Mining and work on mines ;
- (7) Quarrying and stone-breaking ;
- (8) Brick-making ;
- (9) The treatment in mills and factories of padi, rubber and other agricultural produce, including portering in connection with such treatment ;

or in any other kind of labour which may be declared by the High Commissioner to be subject to the provisions of this Chapter : provided always that persons employed exclusively in administrative or clerical work, or in gardens attached to private residences, shall not be deemed to be Indian labourers for the purposes of this Chapter. For the purpose of this Chapter every Asiatic of Indian descent shall be deemed to be a native of the Madras Presidency until the contrary is proved ;

“The Indian Immigration Committee.”

“The Indian Immigration Committee” means the Immigration Committee existing at the time of the passing of this Enactment or hereafter notified by the order of the High Commissioner in the *Gazette* to be the Indian Immigration Committee ;

“A quarter.”

“A quarter” means a quarter of a year consisting of the months of January to March, April to June, July to September, or October to December.

“Register.”

“Register” means the books which are required to be kept under section 152 ;

“Return.”

“Return” means the return which is required to be sent to the Controller under section 153 ;

151. It shall be lawful for the High Commissioner from time to time to define the duties of the Indian Immigration Committee and to appoint such persons as he may think fit to be members of such Committee and to add members to or remove members from such Committee.

High Commissioner may define duties of Indian Immigration Committee and appoint members.

152. Every employer shall keep and write up to date, or cause to be kept and written up to date, books in the English language showing the names of all Indian labourers of whom he was the employer or who have worked on his place of employment, the days on which they have worked and the amounts paid or payable to them as wages. Such books shall be deemed not to be written up to date if by the tenth day of any month all entries required by this section to be made therein in respect of the preceding month have not been made.

Employer to keep books.

153. Every employer shall within one month after the end of each quarter send to the Controller a return showing the number of Indian labourers whose names are entered in his register during the preceding quarter, the total amount paid for work done by Indian labourers, and the total number of days' work done by all Indian labourers of whom he was the employer or who have worked on his place of employment during the preceding quarter: such return shall be accompanied by a certificate signed by the employer that it is a correct summary of the entries in his register during the preceding quarter.

Employer to send return to Controller.

154. Every employer shall, whenever called upon so to do by the Controller or by any officer authorised in writing by the Controller in that behalf, produce for the inspection of the Controller or officer so authorised his register and all other books kept by him in so far as they relate to payments made by him in respect of work done by Indian labourers.

Employer to produce register for inspection.

155. The Controller and any officer authorised by him in writing in that behalf may at any time between sunrise and sunset enter upon and inspect any place of employment and any place which he may reasonably suspect to be a place of employment for the purpose of ascertaining the number of Indian labourers employed thereon, and any person wilfully hindering or obstructing such entry or inspection shall be liable, on conviction, to a fine not exceeding five hundred dollars.

Power to enter upon and inspect any place reasonably suspected to be a place of employment.

156. The Indian Immigration Committee may from time to time, with the consent of the High Commissioner, by notification published in the *Gazette* at least one month before the commencement of the period to which it relates, prescribe quarterly rates to be paid for the ensuing quarter or quarters of the year in which the notification is published or of the ensuing year as follows:

Indian Immigration Committee may impose rates.

- (a) A rate to be paid by every employer in respect of every Indian labourer employed or working on the place of employment during the quarter;
- (b) A further rate to be paid by every employer who employed during the quarter Indian labourers in excess of the number of Indian labourers imported by him with free passages provided by the Indian Immigration Committee during the twenty-four months preceding the commencement of the quarter;

Provided that the rate referred to in clause (b) shall not be payable in respect of Indian labourers directly employed by any Government department and that in the case of Indian labourers not directly employed by any Government department in respect of whom the said rate would, but for this proviso, be payable by the Government the person directly employing such labourers shall for the purposes of clause (b) be deemed to be the employer of such labourers.

Limit of rate.

157. The rate referred to in clause (a) of the last preceding section shall not exceed three dollars a quarter. The rate referred to in clause (b) may be whatever rate the Indian Immigration Committee from time to time, with the consent of the High Commissioner, thinks fit to prescribe: provided always that the whole assessment payable by an employer under the last preceding section in respect of any one quarter shall in no case exceed three dollars for every Indian labourer employed during the quarter.

Assessment to be collected by Controller.

158. The assessment payable by each employer under section 156 shall be collected by the Controller who shall send by post to each employer a notice stating the amount at which he has been assessed for the last preceding quarter.

Employer to pay assessment within twenty-one days.

159. Every employer shall within twenty-one days after the posting to him or to his place of employment of the notice referred to in section 158 stating the amount at which he has been assessed for the last preceding quarter under section 156 pay to the Controller the amount mentioned in such notice: such amount shall be deemed a debt due to the State in which his place of employment is situated and if not paid within such twenty-one days shall bear interest at the rate of eight per cent. per annum. Any such notice signed by the Controller shall unless and until rectified by the Controller be conclusive evidence that the amount stated therein is due by the employer: provided that the employer may within fourteen days after the receipt of any notice appeal to the Indian Immigration Committee and in such case the Indian Immigration Committee shall consider the matter and its decision shall be final.

Amount of assessment, how calculated.

160. (i) The amount at which each employer shall be assessed in respect of each quarter shall be ascertained as hereinafter in this section provided.

(ii) The amount of the assessment under clause (a) of section 156 shall be the amount obtained by multiplying the average number of Indian labourers employed or working on the place of employment during the quarter by the rate.

(iii) The amount of the assessment under clause (b) of section 156 (if any) shall be the amount obtained by multiplying the average number of Indian labourers employed or working on the place of employment during the quarter less the number of adult Indian labourers shown to the satisfaction of the Controller to have been imported by the employer with free passages from India paid for by the Indian Immigration Committee, during the twenty-four months preceding the commencement of the quarter, by the rate.

(iv) For the purposes of the calculations referred to in this section :

- (a) The average number of Indian labourers employed or working on the place of employment shall be the number obtained by adding together the total number of days' work done by each Indian labourer during the quarter and dividing the total by the number of working days comprised in the quarter ;
- (b) The "number of working days comprised in any quarter" shall be such number as may be fixed by the Indian Immigration Committee for such quarter ;
- (c) An adult Indian labourer means an Indian labourer for whom a free full rate passage from India has been paid for by the Indian Immigration Committee.

(v) The Indian Immigration Committee may from time to time make rules determining what shall be deemed to constitute a day's work, and such rules shall be published in the *Gazette*.

161. (i) The fund now subsisting under the provisions of "The Tamil Immigration Fund Enactment, 1911," hereby repealed shall be taken over by and form part of the fund constituted under this Enactment.

Immigration
Fund.

(ii) All moneys paid by employers to the Controller in accordance with the provisions of this Chapter shall be paid into a fund to be known as "The Indian Immigration Fund" and may be disbursed for the following purposes only :

Disbursement
of Fund.

- (a) For or towards the payment of free passages for Indian labourers and their families from the Madras Presidency to the Federated Malay States or the Colony or Johore or Kedah or Perlis or Kelantan : such passages shall be allotted in accordance with rules to be framed from time to time by the Indian Immigration Committee and published in the *Gazette* ;
- (b) For the general expenses incurred in connection with the recruiting of labour in the Madras Presidency, and in connection with the quarantine on arrival at Singapore, Penang or Port Swettenham from India of those for whom free passages have been provided under this Enactment ;
- (c) For the maintenance of a home for decrepit Indian labourers ;
- (d) For the payment of interest upon moneys borrowed by the Indian Immigration Committee under sub-section (iii) ;
- (e) For the payment of recruiting allowances ;
- (f) For the payment of the cost of preparing the register prescribed by section 66 (i).

(iii) It shall be lawful for the Indian Immigration Committee to borrow from time to time at such rates of interest as the High Commissioner shall approve such moneys as the Committee may deem necessary for the purpose of making the payments referred to in sub-section (ii).

Borrowing
powers.

Mode of management.

162. (i) Payments out of the Indian Immigration Fund shall be made by the Controller on the authority of the Indian Immigration Committee.

(ii) The Controller shall present half-yearly accounts of the Indian Immigration Fund to the Committee.

(iii) Such half-yearly accounts, when passed by the Indian Immigration Committee, shall be published in the *Gazette*.

Offences under this Part.

163. Any employer who is subject to the provisions of this Part :

- (a) Who shall fail to keep or cause to be kept a register ;
- (b) Whose register shall not be kept up to date unless he shall explain such omission to the satisfaction of the Court ;
- (c) Whose register shall contain any incorrect or incomplete entry (unless he shall satisfy the Court that such entry was not made with intent to evade payment of moneys payable under this Part) ;
- (d) Who shall fail to send in a return within the time prescribed by section 153 ;
- (e) Who shall send in a return containing any incorrect or incomplete statement (unless he shall satisfy the Court that such statement was not made with intent to evade payment of moneys payable under this Part) ;
- (f) Who shall refuse or wilfully omit to produce any book for inspection as required by section 154 ;

Penalty.

shall be liable, on conviction, to a fine not exceeding five hundred dollars.

Special penalty where there is intent to evade payment.

164. In every case in which an employer who is subject to the provisions of this Part is convicted of failure to keep or cause to be kept a register, and in every case in which such an employer is convicted of keeping or causing to be kept a register which contains any incorrect or incomplete entry and in every case in which such an employer is convicted of sending in a return containing any incorrect or incomplete statement the Court shall forthwith proceed to determine, taking further evidence if necessary, the number of Indian labourers in respect of whom the employer is liable to assessment under this Part, and the employer shall, in addition to any fine imposed upon him, pay a penalty of ten dollars in respect of each such Indian labourer. Such penalty shall be added to the fine imposed and shall be recovered and dealt with as part thereof. The payment of such penalty shall not be deemed to be a payment of the assessment due under the provisions of this Part in respect of such Indian labourer, and in a suit for the recovery of assessment no set-off or defence shall be allowed on account of such payment.

No prosecution without the authority of the Controller.

165. (i) No prosecution for any offence against the provisions of this Part shall be instituted except by the Controller or by an officer authorised by him in writing in that behalf.

Right to appear.

(ii) The Controller and any officer authorised by him in writing in that behalf shall have the right to appear before any Court.

Disposal of fines.

166. Every fine imposed by virtue of this Chapter shall be paid over to the Controller and shall become part of the Indian Immigration Fund.

PART VII.

SPECIAL PROVISIONS RELATING TO LABOURERS EMPLOYED
IN MINES.

CHAPTER XIV.

INTERPRETATION AND PROVISIONS FOR THE OBSERVANCE
OF MINING USAGE.

167. The provisions of this Part shall only apply to labourers in mines and shall, where such provisions are repugnant to the other provisions of this Enactment, be taken to repeal for the purpose of carrying into effect this Part such other provisions, but except in so far as is necessary to give effect to this section the provisions of this Part shall be additional to, and in extension of, the other provisions of this Enactment. Limitation of application.

168. For the purposes of this Part unless the context otherwise requires : Interpretation.

“Employer” includes a mining advancer, commonly called Kiu-chu (繳主). “Employer.”

“Labourer” includes mining mandors, overseers and headmen commonly called Nai-cheng-thau (坭井頭), Hop-thung-thau (合同頭) or Hang-kong (行港), respectively. “Labourer.”

“Tribute labourers” means labourers who work in any mine without any fixed remuneration but with the right to retain for themselves the value of all minerals won from the mine, subject to the obligation to pay to the mine owner or his lessee a fixed percentage of such value, and who agree with any person to receive from him exclusively advances of food and supplies and pledge the value of all minerals won as security therefor; “Tribute labourers.”

“A day’s work,” commonly called a Kung (工), means work for a day of as many hours, not exceeding nine, as is customary for any labourer to work in a mine. “A day’s work.”

169. (i) Any person who employs labourers in a mine either as labourers on Hun wages [which term shall include Kongsí Kung (公司工) and Tai-Ki-Tsai (大箕仔) labourers] or as piece-work labourers [Nai-Cheng (坭井) labourers] or as tribute labourers may define the conditions upon which such labourers are engaged by affixing in a conspicuous place in such mine a notice in the Chinese language setting out the conditions upon which he engages such labourers, and, in the absence of any special agreement to the contrary, the terms of such notice shall be deemed to be binding as a contract under this Enactment as between such employer and such labourers as may enter such employment whilst such notice shall continue to be so affixed. Mining notices deemed to be binding as contracts in the case of mining labourers.

Provided always that

- (a) such notice shall clearly set out the name of the employer responsible to the labourers for their wages and other emoluments due to them or in the case of tribute Provisos.

labourers for the advancing to them of all necessary goods and moneys ;

- (b) such notice shall contain no illegal or immoral conditions ;
- (c) no labourer taking service under such notice shall be compelled to continue working under its conditions for a longer period than six or in the case of tribute labourers twelve months notwithstanding any debt that he may owe to any person ;
- (d) all the terms and conditions of every such notice shall be approved by the Controller, who shall retain a copy signed by the employer stating the date from which the notice is to be in force ;

And further in the case of tribute labourers that

- (e) it shall also clearly set out the term during which the labourer may be required to labour ;
- (f) if at any time the employer shall fail to make due and sufficient advances to the labourers of the necessary goods and moneys, none of the conditions of the notice shall be enforceable by the employer against the labourers, and such labourers shall be at liberty to seek another advancer.

Penalty.

(ii) Any employer who shall contravene any of the provisions of this section shall be liable, on conviction, to a fine not exceeding five hundred dollars.

Wages of labourers, when payable.

Provisos.

170. All wages earned by a labourer under such an engagement shall become due and payable on a date previously arranged between the parties thereto in accordance with the mining usage of the place in which such labourer is working : provided that in no case shall such date be more than six months later than the date of the commencement of such engagement, and provided further that in the event of the employer ceasing to provide a proper and sufficient supply of money and necessaries for the use of the labourer, as required by the terms of his engagement, all moneys due from him to such labourer shall immediately become payable.

Mining usage.

171. All agreements and contracts and notices deemed to be binding as contracts under this Part shall be construed according to the mining usage of the place in which the same are to be performed.

Documents to be evidence.

Provisos.

172. All documents and books of account having relation to agreements, contracts or notices deemed to be binding as contracts under this Part or to the work to be performed under such agreements, contracts or notices shall be *primâ facie* evidence thereof : provided that such documents and books shall have been kept in accordance with the mining usage of the place in which the agreement, contract or notice is to be performed.

Exhibition of working-board

173. Every employer shall exhibit, in a conspicuous place in the kongsi-house, a correct Kung-Pai (工牌) or working-board, containing the names of all labourers working in such kongsi, and shall enter thereon, according to mining usage, the work done by each labourer in the kongsi.

174. Every employer shall exhibit, in a conspicuous place in the kongsí-house, at the end of every Chinese month, a Lat-Tsai (叻仔) or account, kept according to mining usage, of moneys earned and received by each labourer in the kongsí during such month.

Exhibition of labourers' accounts.

175. Every employer who shall make default in any of the obligations imposed upon him by the two last preceding sections, shall be liable to a fine not exceeding one hundred dollars.

Penalty for default.

176. The advancer to a mine and the employer, if separate persons, shall be jointly and severally liable to the labourer for the payment of wages due to him: provided that the liability of the advancer shall cease if he shall have given reasonable notice to the labourer that on a certain day and at a certain time and place he intends to hand over his wages to the employer, and shall have so handed them over accordingly.

Liability for payment of wages.

Provisos.

177. Labourers on time or fixed wages employed in a mine worked by tribute labourers shall, in the absence of proof to the contrary, be regarded as being employed by the advancer and not by such tribute labourers.

Labourers not employed by tribute labourers.

178. (i) Whenever any labourer complains to the Court or the Controller that he has reasonable grounds for believing that his employer, in order to evade payment of his wages, is about to leave the State wherein the mine is situated, it shall be lawful for the Court or the Controller to summon such employer and direct him to show cause why he should not be required to give security by bond to remain in the State till such wages are paid; and if after hearing the evidence of such employer the Court or the Controller adjudicate that such bond shall be given, it shall be lawful for the Court or the Controller to order such employer to give security by bond in a reasonable sum that he will not leave the district or the State (as the Court or the Controller may direct) until he satisfies the Court or the Controller that all the just claims of his labourers against him for wages have been paid or settled.

Employer about to abscond to evade payment of wages.

(ii) If the employer fails to comply with the terms of such order to give security, he shall be detained in the civil prison till arrangements are made by the Court or the Controller for settling the claims of his labourers by distress or otherwise: provided that such employer shall be released at any time on security being furnished, or on his payment, either in whole or in a reasonable part, of all claims of his labourers; and provided that in no case shall the period of such detention exceed three months.

(iii) The bond to be given by an employer shall be a personal bond with one or more sureties, and the penalty for breach of the bond shall be fixed with due regard to the circumstances of the case and the means of the employer.

(iv) If on, or after, complaint made by any labourer under subsection (i) it appears to the Court or the Controller that there is good ground for believing that the employer complained against has absconded or is absconding or is about to abscond, it shall be lawful for the Court or the Controller to issue a warrant for the apprehension of such employer, and such employer shall be detained in safe custody pending the hearing of the complaint unless he finds

Arrest of employer.

good and sufficient security to the satisfaction of the Court or the Controller for his appearance to answer the complaint.

(v) If after summoning an employer to appear to show cause why he should not be required to give security by bond to remain in the State wherein the mine is situated till the wages of his labourers are paid it shall appear to the Court or the Controller after enquiry that the labourer who made the application had no reasonable or sufficient grounds for making it, the Court or the Controller may impose a fine of five dollars upon such labourer and in default of payment sentence him to imprisonment of either description for a term not exceeding fourteen days.

179. (i) In the event of any dispute arising between employer and labourer as to any matter dealt with in this Part, it shall be lawful for the Controller to enquire into and decide all such disputes and to make any order he may deem just for the purpose of giving effect to such decision.

(ii) The mode of procedure in any complaint shall be as follows :

(a) The person complaining shall lodge a memorandum in writing at the office of the Controller, specifying shortly the subject matter of the complaint and the remedy sought to be obtained, or he may make his complaint in person at any time or place to the Controller, who shall forthwith reduce it to writing. Upon receipt of such memorandum or verbal complaint the Controller shall summon in writing the party against whose conduct such complaint is made, giving notice to him of the nature of the complaint and the time and place at which the same will be enquired into, and he shall also notify or summon all persons whose interests may be affected by such enquiry ;

(b) At the time and place appointed the parties shall attend and state their case before the Controller and may call evidence, and the Controller having heard such statements and evidence and any other evidence which he may deem necessary shall give his decision ;

(c) If any person interested shall have been duly summoned by the Controller to attend at such enquiry and shall have made default in so doing, it shall be lawful for the Controller to hear and decide the complaint in the absence of such person, notwithstanding that the interests of such person may be prejudicially affected by his decision ;

(d) The Controller shall keep a Case Book, in which he shall enter notes of the evidence taken and the decisions arrived at in each case heard before him, and shall authenticate the same by attaching his signature thereto, and the record in such Case Book shall be sufficient evidence of the giving of any decision, or of the making of any order, and of the terms thereof ; and any person interested in a dispute, decision or order shall be entitled to a copy of such record upon payment of a fee of one dollar ;

Frivolous complaint.

Penalty.

Protector may adjudicate between employer and labourer.

Procedure.

Complaint.

Hearing.

Absence of party interested.

Case Book.

Copy of record.

- (e) No fees shall be charged by the Controller in respect of processes issued by him under this section and all orders made by the Controller shall be enforced by the Court in the same manner as a judgment of the Court, and all necessary processes may be served by the Court on his behalf; Fees.
- (f) In the event of any person interested being dissatisfied with the decision or order of the Controller, he may, within fourteen days after such decision or order, file a memorandum of appeal therefrom in the Court of a Judicial Commissioner; for the purposes of any such appeal the decision or order of the Controller shall be deemed to be a decision of the Court of a Magistrate. Appeal.
- (g) Nothing in this section shall limit or affect the jurisdiction of any Court which may adjudicate upon any complaint arising out of an agreement or contract made under this Enactment. Jurisdiction of Court.

CHAPTER XV.

SANITATION AND HOSPITALS UPON MINES.

180. (i) Every employer who has agreed or contracted to provide house accommodation for his labourers shall supply and maintain such accommodation as shall fulfil all reasonable sanitary requirements. Should it appear to the Controller that the accommodation provided is likely, by reason of its site, construction, size, or otherwise, to endanger the health of any labourer or of any other person, it shall be lawful for the Controller to serve the employer with an order in writing requiring him to remove, alter or enlarge such accommodation within a reasonable time, to be stated in such order; and such order may also, if necessary, declare that no labourer shall be permitted to occupy any building the subject of such order, pending such removal, alteration, or enlargement. House accom-
modation.

(ii) Any employer who shall neglect or refuse to comply with any order made under sub-section (i) shall be liable, on conviction, to a fine not exceeding two hundred dollars, and further to a fine not exceeding ten dollars for each day beyond the prescribed time during which such removal, alteration, or enlargement remains uncompleted. Penalty.

181. Should the accommodation upon any mine be insanitary or otherwise unsatisfactory, it shall be lawful for the Controller or a Magistrate to order that no labourers shall be admitted to such mine until the necessary improvement has been effected. Order pro-
hibiting ad-
mission of
labourers.

182. Every employer who is bound to provide house accommodation for his labourers shall also be bound to provide for them a sufficient quantity of wholesome water. Water
supply.

183. (i) Should it appear to the Controller that the water provided for the use of the labourers upon any mine is insufficient in quantity or unwholesome in quality, it shall be lawful for the Controller to serve such employer with an order in writing requiring him to increase or improve such supply within a reasonable time, to be stated in such order, and such order may also, if necessary, declare that the employer shall not permit any labourer to use the water which is the subject of such order until such improvement has been effected. Order to
improve
water supply.

Penalty.

(ii) Any employer who shall neglect or refuse to comply with any order made under sub-section (i) shall be liable, on conviction, to a fine not exceeding two hundred dollars, and further to a fine not exceeding ten dollars for each day beyond the prescribed time during which such increase or improvement shall remain uncompleted.

Sick labourers to be sent to hospital.

184. (i) In the event of any labourer falling sick and requiring medical treatment it shall be the duty of his employer to take or cause him to be taken, with as little delay as possible, to the nearest Government hospital for treatment, providing transport if necessary.

Penalty for non-compliance.

(ii) Every employer who shall fail to take, or cause to be taken, to hospital any such labourer shall be liable, on conviction, to a fine not exceeding one hundred dollars, or to imprisonment of either description for a term not exceeding two months, and upon conviction for a second or subsequent similar offence, committed within two years from the date of a previous conviction for such an offence, shall be liable to a fine not exceeding five hundred dollars, or to imprisonment of either description for a term not exceeding six months, or to both.

Order for removal of sick labourer.

185. If it shall appear at any time to the Controller or to a Magistrate or to a qualified Medical Officer of the Government that a labourer is suffering from a contagious or infectious disease or that it is otherwise desirable that he should be removed and placed under medical care, it shall be lawful for the Controller or such Magistrate or Medical Officer to cause such labourer to be forthwith removed to such place as he may direct, and such labourer shall thereupon be detained until discharged by an order in writing under the hand of a Medical Officer.

Power to apply Part VIII to mines.

186. It shall be lawful for the Chief Secretary to Government, upon the recommendation of the Controller, to declare by notification in the *Gazette* that the provisions of Part VIII or of such sections thereof as may be specified in such notification shall apply to and be complied with by the owner, lessee or occupier of any mine.

PART VIII.

PROVISIONS RELATING TO THE HEALTH OF ASSISTANTS AND LABOURERS.

CHAPTER XVI.

INTERPRETATION AND HOUSE ACCOMMODATION.

Interpretation

187. In this Part unless the context otherwise requires :

“ Dangerous infectious or contagious disease.”

“ Dangerous infectious or contagious disease ” means plague, cholera and small-pox and any other disease which the Chief Secretary to Government may from time to time, by notification in the *Gazette*, declare to be a dangerous infectious or contagious disease for the purposes of this Part.

“ Estate.”

“ Estate ” means any agricultural land exceeding twenty-five acres in extent upon which agricultural operations of any kind are carried on or upon which the produce of any plants or trees is collected or treated or any mine to which the provisions, or any portion of the provisions, of this Part have been declared to apply under section 186 to the extent of the provisions so declared to apply.

“Labourer” includes any Asiatic who performs or is under agreement or contract to perform any work for any other person for payment or reward, whether the payment or reward is to be made by the employer or by some other person who has entered into a contract with the employer to have the work done.

“Labourer.”

“Resident manager” of an estate means any employer or agent of an employer who resides on, or is in immediate charge of, the estate on which the labourers are employed.

“Resident manager.”

188. (i) It shall be the duty of every employer to provide for all assistants or persons other than labourers employed by him on an estate sufficient and proper house accommodation.

House accommodation for assistants.

(ii) Should it appear to the Medical Officer that any such accommodation is by reason of site, construction, size or otherwise likely to endanger the health of the assistants or other employees housed therein or of any other person he shall report accordingly to the Resident, and shall submit with his report his recommendations as to the action necessary to be taken; and on receipt of such report it shall be lawful for the Resident to give to the employer or to the resident manager, or to both, an order in writing requiring him to remove, alter or enlarge such accommodation within a reasonable time to be stated in the order, and such order may also, if it appears necessary to the Resident, prescribe the site to which such accommodation is to be removed, the nature of the alterations to be made or the manner in which, and the extent to which, the accommodation is to be enlarged, and may further declare that no assistants or other employees as stated in the order may be permitted to occupy such accommodation until such removal, alteration or enlargement has been carried out.

Order in respect thereof.

189. It shall be the duty of every employer to provide for every labourer employed by him on an estate for whom he is bound either by contract or agreement or under any written law to provide house accommodation and for every labourer employed by him on an estate who resides on such estate or on any other land owned or leased by such employer or otherwise in his control

Provisions to be made for labourers on an estate by the employer.

- (a) sufficient and proper house accommodation;
- (b) a sufficient supply of wholesome water;
- (c) sufficient and proper sanitary arrangements;
- (d) hospital accommodation and equipment;
- (e) medical attendance and treatment including diets in hospital;
- (f) a sufficient supply of medicines of good quality.

190. (i) The house accommodation provided shall in all cases fulfil all reasonable sanitary requirements and the surroundings thereof shall be kept in a clean and sanitary condition.

House accommodation to be sanitary.

(ii) Every employer who shall be guilty of housing any labourer in a building the state of which, or of the surroundings of which, is such as to endanger the health or safety of such labourer shall, on conviction, be liable to a fine not exceeding one hundred dollars for each labourer housed in such building.

Penalty for housing in insanitary building.

191. On every estate upon which the labourers employed or residing are not all of one nationality or race, the employer shall provide separate lines for the labourers of each nationality or race as the Controller shall direct.

Separate lines to be provided for each nationality or race.

Perment
liens to be in
accordance
with approved
design

192. (i) All lines erected after the commencement of this Enactment upon any estate or upon other land adjacent to an estate by an employer and intended for permanent use shall, unless the permission of the Controller is obtained to the contrary, be erected in general accordance with one or other of the designs prepared by order of the Chief Secretary to Government, and approved by the Medical Officer, as suitable for the accommodation of labourers according to the nature of the site selected (copies of which shall be obtainable free of charge by any employer on application to the Controller) and shall be of such materials as are thereon specified.

(ii) Any employer desiring to erect lines intended for permanent use not in accordance with a design so approved shall submit plans in duplicate of the lines proposed to be erected to the Controller for approval.

Drains.

(iii) Drains shall be carried to such distance as the Medical Officer shall in each case order.

Surroundings
of lines to be
kept clean.

193. All lines intended for permanent use shall be erected as far as possible, having regard to all circumstances, from any jungle. A space of not less than 200 feet all round such lines shall wherever possible be kept clear of jungle and of buildings, and it shall be the duty of the resident manager to see that such space is kept clear of refuse and excreta and that the lines are cleaned out daily and all refuse in or near the lines collected and buried and to detail a sufficient number of labourers daily to carry out these duties.

Insanitary lines.

194. Should it appear to the Medical Officer that any lines are by reason of site, construction, size or otherwise likely to endanger the health of any labourers housed therein or of any other person, he shall report accordingly to the Controller, and shall submit with his report his recommendations as to the action necessary to be taken; and on receipt of such report it shall be lawful for the Controller to give to the employer or to the resident manager, or to both, an order in writing requiring him to remove, alter or enlarge or replace such lines within a reasonable time to be stated in the order, and such order may also, if it appears necessary to the Controller, prescribe the site to which the lines are to be removed, the nature of the alterations to be made or the manner in which, and the extent to which, the buildings are to be enlarged, and may further declare that no labourer or no more than a fixed number of labourers as stated in the order may be permitted to occupy such lines until such removal, alteration or enlargement has been carried out.

CHAPTER XVII.

WATER SUPPLY.

Water supply to
be adequate.

195. (i) The supply of water available for each labourer for drinking, cooking or bathing purposes shall be not less than such number of gallons a day as the Controller shall by order either generally or for any particular estate direct.

Penalty for not
providing
adequate
supply.

(ii) Any employer failing to provide the quantity of water ordered by the Controller under this section shall be liable, on conviction, to a fine not exceeding one hundred dollars for each day during which the quantity provided shall fall short of the quantity ordered to be available.

196. The Medical Officer may at any time if it appears to him necessary for the health of any labourers employed or residing on an estate by order in writing direct the resident manager to prevent the use for drinking, cooking or bathing purposes of the water from any river, stream, canal, tank, pond, well or other source of supply on the estate either absolutely or unless and until certain precautions specified in such order have been taken or enforced, as the case may be, and may in like manner direct the resident manager to have any tank or well closed and any pond filled up.

Protection of water supply.

197. On any estate upon which there are wells the water of which is or may be used for drinking, cooking or bathing purposes it shall be the duty of the resident manager, if so directed by the Medical Officer, to have all or any of such wells bricked or protected in accordance with one or other of the plans approved by the Chief Secretary to Government, copies of which shall be obtainable free of charge by any employer from the Controller.

Protection of wells.

198. Should it appear to the Medical Officer that the water provided for the use of any labourers housed in any lines is insufficient in quantity or unwholesome in quality, he shall report accordingly to the Controller, and on receipt of such report it shall be lawful for the Controller to give to the employer or to the resident manager, or to both, an order in writing requiring him within a reasonable time to be stated in the order to increase or improve the supply of water or to adopt any precautions regarding the use of such water as may to the Controller seem necessary, and such order may also declare that no labourer shall be permitted to use the water the subject of such order unless and until such improvement has been effected or such precautions have been taken or enforced.

Water supply insufficient or unwholesome.

CHAPTER XVIII.

SANITARY ARRANGEMENTS.

199. (i) The arrangements for the disposal of night-soil shall be in accordance with the provisions of any rules made from time to time by the Chief Secretary to Government under this Enactment and published in the *Gazette*.

Disposal of night-soil.

(ii) Every employer who shall neglect after receipt of a notice in writing from the Medical Officer notifying him that the arrangements for the disposal of night-soil on any estate are not in accordance with such rules to take within a time specified in such notice such steps as may be necessary to secure that the rules are complied with, shall be liable, on conviction before the Court, to a fine not exceeding one hundred dollars and to a further fine in addition of ten dollars for each day during which such neglect shall continue after the date of such conviction.

Penalty.

200. Should it appear to the Medical Officer that the latrine accommodation for the labourers housed in any lines is such as to be dangerous to the health of such labourers or of any other persons, the Medical Officer shall report accordingly to the Controller and shall submit with his report his recommendations as to the action necessary to be taken; and on receipt of such report it shall be lawful for the Controller to give to the employer or to the resident manager, or to both, an order in writing to remove or alter the construction of such latrine

Defective latrine accommodation.

Order by Controller.

accommodation within a reasonable time to be stated in such order, and the order may also, if it appears necessary to the Medical Officer, prescribe the site to which such latrine accommodation is to be removed or the alterations in construction to be made, and may further declare that no labourer may be permitted to use such latrine accommodation until such removal or alteration has been carried out.

Use of
disinfectants.

201. The Medical Officer may at any time, if it appears to him necessary for the health of any labourers employed or residing on an estate, by order in writing direct the resident manager to have any latrine immediately closed or disinfected in the manner prescribed in such order and may by a like order give directions as to the use of disinfectants generally on the estate.

CHAPTER XIX.

HOSPITAL ACCOMMODATION, EQUIPMENT AND MEDICAL ATTENDANCE.

Employer to
maintain estate
hospital.

202. (i) The Controller may at any time by order in writing require any employer to construct within a reasonable time to be stated in such order and thereafter to maintain at his own expense a hospital on or in the immediate neighbourhood of any estate upon which labourers are employed by him with accommodation for such number of patients as stated in such order, or if there is already a hospital maintained by such employer to enlarge or add to such hospital, so as to provide accommodation for a further number of patients as stated in the order; and may further require him to employ a registered medical practitioner as defined by "The Medical Registration Enactment, 1907," to reside at and have charge of such hospital or any hospital maintained by such employer, and to provide such medical practitioner with fit and proper house accommodation to the satisfaction of the Medical Officer.

Hospitals for
two or more
adjacent
estates.

(ii) If two or more estates are so situated that the required accommodation for patients from such estates can be conveniently provided in one hospital the employers concerned may, with the sanction of the Controller, provide one hospital for such estates instead of a separate hospital for each estate; but in such case every such employer and resident manager shall be responsible for the due maintenance of such hospital and for the provision of the prescribed staff, equipment, diets and medicines and for the observance of any rules made for the inspection and management of such hospital and the furnishing of any returns required as if such hospital were provided and maintained solely by him.

Maintenance
and treatment
of contract
labourer in
hospital.

203. (i) The employer shall bear the expenses of the maintenance and treatment in such hospital of every contract labourer so long as he remains in such hospital who was at the time of his admission to the hospital or within seven days previously employed on the estate, and shall not be allowed to recover such expenses from the labourer either by deduction from wages or otherwise, but shall not, except as may be provided in the contract of such labourer, be required to pay wages in respect of any time during which the labourer is in hospital.

(ii) In the case of a labourer who was employed under an agreement the employer shall defray the expenses of his maintenance and treatment in such hospital so long as he remains in hospital, but may recover from such labourer the expenses of his treatment and maintenance at such rate as the Controller, with the approval of the Chief Secretary to Government, may from time to time prescribe by notification in the *Gazette* in respect of any period in excess of thirty days during which such labourer shall have remained in the hospital.

Maintenance and treatment of labourer under agreement.

204. If a labourer at the time of his admission to a Government hospital or within ten days previously was employed on or after employment was residing on any estate the resident manager shall pay the expenses of his maintenance and treatment in such hospital at such rate as the Controller, with the approval of the Chief Secretary to Government, may from time to time prescribe by notification in the *Gazette*. Such expenses shall, whatever be the amount, be recoverable from such resident manager in a Civil Court at the suit of the Medical Officer in charge of such hospital, and the certificate of such Medical Officer shall be sufficient *prima facie* evidence that the amount therein specified is due from the resident manager: provided that unless such labourer was serving under a contract no more than thirty days' expenses in hospital shall be recoverable.

Sick labourer admitted to a Government hospital.

205. Any employer or resident manager who without reasonable excuse, the proof whereof shall lie on him, shall fail to take, or cause to be taken, to hospital any labourer employed on the estate who requires medical treatment shall be liable, on conviction, to a fine not exceeding fifty dollars, and upon conviction for a second or subsequent offence committed within two years from the date of a previous conviction for such an offence shall be liable to a fine not exceeding five hundred dollars.

Penalty for not taking sick labourer to hospital.

206. Unless there is a registered medical practitioner resident on the estate in pursuance of section 202 every estate hospital shall be visited at least once in every month, and oftener if the Medical Officer shall so require, by a private medical practitioner holding a qualification registrable by the Medical Council of the United Kingdom of Great Britain and Ireland, and it shall be the duty of the employer to make arrangements accordingly and of the resident manager if he is not the employer to report to the employer if this is not done.

Estate hospitals to be visited by a qualified medical practitioner.

207. On every estate on which an estate hospital is not required to be constructed and maintained by the employer for the labourers employed thereon it shall be the duty of the employer to make such provision for the treatment of sick labourers as the Controller, after consultation with the Medical Officer, shall in each case order.

Estates on which a hospital is not maintained.

CHAPTER XX.

INFECTIOUS AND CONTAGIOUS DISEASES.

208. (i) It shall be the duty of the resident medical practitioner, and in his absence or if there is no resident medical practitioner, of the resident manager, to isolate at once any labourer or other person on an estate whom he may suspect to be suffering from any

Duty to report suspected case of infectious disease, etc.

dangerous infectious or contagious disease and detain under observation any other persons whom he may deem likely to have contracted such disease and with the least possible delay to notify the nearest Government Medical Officer, and pending the arrival on the estate of the Medical Officer to take immediate steps to prevent any person from occupying the building in which the person suspected to be suffering from such disease has been housed.

Penalty for neglect.

(ii) Any person who neglects to perform to the best of his ability the duty imposed upon him by sub-section (i) shall be liable, on conviction by the Court, to a fine not exceeding five hundred dollars or to imprisonment for a term not exceeding three months.

Duty of employer to make special provision for infectious cases and contacts.

209. (i) On the occurrence of any infectious or contagious disease on any estate it shall be the duty of the employer forthwith, if so directed by the Medical Officer, to set apart a place for the reception of any labourers employed on the estate whom it shall appear necessary or desirable to segregate in the interests of the public health or of any other labourers employed on the estate and to make at his own expense such arrangements for the maintenance of such labourers while so segregated and for the treatment of any labourers suffering from such disease as may to the Medical Officer seem necessary.

Powers of Medical Officer to remove infectious cases and contacts.

(ii) If it shall at any time appear to the Medical Officer that a labourer employed on any estate is suffering from a contagious or infectious disease or that it is otherwise necessary in the interest of the public health or of the health of any other labourers employed on the estate that he be removed and placed under medical supervision, it shall be lawful for the Medical Officer to cause such labourer to be removed to such place as he may direct and there to be detained until discharged by order in writing under the hand of a Medical Officer of Government.

CHAPTER XXI.

GENERAL.

Employer to provide appliances for conveying labourers to hospital.

210. (i) It shall be the duty of the resident manager

(a) to have every labourer employed on the estate who requires medical treatment taken with the least possible delay to the hospital provided for labourers employed on the estate or, if there is no such hospital, to the nearest Government hospital; and

(b) to make such arrangements and to provide such appliances for the transport of sick labourers to hospital as the Medical Officer may from time to time order.

Removal of labourer to hospital.

(ii) Any Medical Officer may order any labourer on an estate who requires medical treatment to be removed to hospital.

Duty of kanganis, etc., to report cases of sickness.

211. (i) It shall be the duty of every headman, kangani, mandor, or other person in immediate charge of any gang of labourers to report immediately to the resident manager the absence of any labourer from work on account of sickness.

Penalty.

(ii) The resident manager and any Magistrate shall have power to fine any person who neglects to furnish the report required by

sub-section (i). Such fine shall not exceed five dollars for each such offence and may be deducted from the wages of such person. A record thereof shall be kept by the resident manager and shall be open to inspection by the Controller.

212. The Medical Officer may at any time if it appears to him necessary for the health of the labourers employed on any estate by order in writing to the resident manager direct

Power of Medical Officer to order quinine, etc., to be administered.

- (a) that quinine be regularly administered free of charge in such doses and at such times as shall be stated in the order to all or any persons or to any class of persons employed or residing on the estate ;
- (b) that all or any of the labourers employed on the estate be vaccinated ;
- (c) that hot coffee or congee be provided at such times as shall be stated in the order, free of charge and in addition to the diets, if any, which the employer is bound to supply, to all or any labourers or to any class of labourers employed on the estate.

213. (i) It shall be the duty of the employer to provide that all lines are visited and inspected daily by a dresser or other responsible person who shall report to the resident manager if the lines are not kept clean or if any refuse is allowed to accumulate in the neighbourhood of the lines, and shall also examine and if necessary take, or cause to be taken, to hospital any labourer found on the lines who appears to be suffering from any complaint and report to the resident manager that he has done so.

Daily inspection of lines.

(ii) In any case where the Medical Officer shall consider that the visits, inspections or other duties prescribed by sub-section (i) are not satisfactorily carried out he may notify the resident manager accordingly, specifying the matters in respect whereof he is not satisfied, and the resident manager shall thereupon make such further or other arrangements, whether by substituting a different dresser or person to perform the said duties or otherwise, as the Medical Officer may require.

214. (i) It shall be lawful for an employer or resident manager, with the approval of the Controller, to make and publicly notify sanitary regulations for observance on any estate.

Employer may make sanitary regulations.

(ii) Any labourer guilty of wilfully disregarding any sanitary regulation made and publicly notified under sub-section (i) and any labourer neglecting or refusing to go to hospital when so ordered by the resident manager, the resident medical practitioner or a qualified dresser shall be liable, on conviction, to a fine not exceeding five dollars or to imprisonment for a term not exceeding fourteen days.

Penalty.

215. Any employer omitting to comply with any of the provisions of section 189 or with any order made under section 194, 198, 200, 202, 207 or 209 shall be liable, on conviction by the Court, to a fine not exceeding two hundred and fifty dollars and to a further fine of fifty dollars a day for every day during which such default shall continue

Neglect by employer to comply with orders.

Neglect by
resident man-
ager to comply
with orders.

216. Any resident manager neglecting or refusing to comply with any order made under section 196, 197, 201, 210 or 212 or with any requirement of a Medical Officer under section 213 shall be liable, on conviction by the Court, to a fine not exceeding two hundred dollars and to a further fine of ten dollars a day for every day during which such default shall continue.

Offences against
sections 191 and
258.

217. Every employer or resident manager who shall

- (a) fail to provide separate lines for labourers of separate nationalities as directed by the Controller ;
- (b) erect or cause to be erected any lines intended for permanent use which are not in accordance with a design approved as suitable for the class of site selected or without having first submitted plans of such lines for approval and obtained such approval, as the case may be ;
- (c) fail to comply with any rule made under section 258 or to furnish within the prescribed time any return required to be forwarded by him under any rule made under the said section ;

shall be liable, on conviction, to a fine not exceeding two hundred dollars.

PART IX.

PROVISIONS RELATING TO PLACES UNFIT FOR THE EMPLOYMENT OF LABOUR.

CHAPTER XXII.

ENABLING POWERS.

Inspection of
place of
employment
before employ-
ment of
labourers or
additional
labourers.

218. (i) Any person who desires to engage labourers for a place of employment on which labourers have not hitherto been employed or have not been employed within the preceding twelve months or who desires to increase the number of labourers already on such place of employment so that the existing arrangements will be inadequate and insufficient for such increase of labourers shall give notice in writing of his desire to the Controller, who shall as soon as possible enquire into and inspect the arrangements which have been made for the residence and employment of labourers on such place and may either permit or refuse to permit the employment of labourers or of additional labourers, as the case may be. If he refuses he shall forthwith furnish a report in writing to the Resident. No person shall employ or permit to reside on such place any labourers or additional labourers, as the case may be, without the permission in writing of the Controller.

Permission
required.

Exemption.

(ii) The provisions of this section shall not apply to any person employing less than fifty labourers on any one place of employment unless such labourers are contract labourers.

Prohibition of
further engage-
ment of
labourers where
arrangements
are inadequate.

219. (i) If the Controller shall at any time have reason to believe that the arrangements made for the residence and employment of labourers on any place of employment where labourers are living or employed are from any cause inadequate for the residence and employment of additional labourers on such place or that the health or condition of the labourers living or employed on such place is

from any cause unsatisfactory, he shall have power by order under his hand conveyed to the employer to prohibit the employment of additional labourers on such place, and it shall thereupon be unlawful for any person to employ or permit to reside on such place any labourers other than those who were residing or employed thereon before the issue of such notice.

(ii) On subsequent proof being furnished to the satisfaction of the Controller that adequate arrangements have been made for the residence and employment of additional labourers on such place of employment or that the health and condition of the labourers living or employed thereon have become satisfactory the Controller may rescind the order made under sub-section (i), and thereupon it shall be lawful for the employer to engage labourers for such place.

Removal of prohibitions.

220. Any employer who shall permit the residence or employment of labourers on any part of the place of employment in contravention of section 218 or section 219 shall be liable to a fine of five hundred dollars or to imprisonment of either description for a period not exceeding six months.

Penalty for causing or permitting labourers to reside in unhealthy locality.

221. (i) If the Controller shall at any time have reason to believe that there is no supervision of labourers, or that the supervision provided on any estate or place of employment is inadequate or ineffective to secure labourers or any class of labourers from ill-treatment or ill-usage, it shall be lawful for the Controller to make such requisitions on the employer as he may deem necessary for obtaining the necessary supervision and causing such ill-usage and ill-treatment to cease, and unless the same are forthwith complied with the Controller shall furnish a full report of the case to the Chief Secretary to Government who may, after consultation with the Resident, make an order prohibiting the further employment after a date to be named in such order of labourers or of any class of labourers on such estate or place of employment, and on the publication of the order in the *Gazette* it shall be unlawful for any person after the day named in such order to employ or permit to reside on such estate or place of employment any labourers or class of labourers specified in such order until the Chief Secretary to Government shall cancel such order.

Power to Chief Secretary to Government to prohibit employment of labourers or class of labourers when supervision is inadequate.

(ii) If the Controller shall at any time have reason to believe that any estate or place of employment is unfit for the employment of labourers or any class of labourers he shall furnish a report in writing to the Chief Secretary to Government who may, after consultation with the Resident, make an order to the same effect as an order under sub-section (i).

Order in cases where place of employment is unfit.

(iii) No order shall be made under this section by the Chief Secretary to Government until the employer shall have had an opportunity of showing cause against the making of an order and of producing evidence.

222. Any person who acts contrary to the terms of any order made under the provisions of section 221 shall be liable, on conviction, to a fine of one thousand dollars with an additional penalty of two hundred dollars a day after the first day's disobedience during the continuance of such contrary action.

Penalty for disobedience to an order.

PART X.

SPECIAL OFFENCES.

CHAPTER XXIII.

OFFENCES AGAINST LABOURERS.

Separating
families.

223. (i) Any person separating, or abetting the separation of, a labourer from his wife or from his children under the age of fifteen years or from any person dependent on him without in any of the above cases his or their consent shall be liable to a fine not exceeding one hundred dollars, and any agreement or contract involving such separation shall be void, and such wife, children or dependent shall be forthwith restored to the labourer by the Controller.

(ii) In the event of an agreement or contract with any married labourer being determined the agreement or contract of the husband or wife, as the case may be, of such labourer shall *ipso facto* be determined and any employer refusing to allow the husband or wife, as the case may be, to accompany such labourer shall be liable to a fine not exceeding one hundred dollars.

Penalty for
molesting
labourer.

224. Any person who, whether alone or in combination with others, hinders or molests by word, gesture or act any labourer in the performance of his agreement or contract, shall be liable to a fine not exceeding two hundred dollars or to imprisonment of either description for a period not exceeding six months.

Crimping.

225. (i) Any person who

- (a) shall knowingly seduce or take, or attempt to seduce or take, from his service or employment any labourer; or
- (b) shall take into his own service or employment any labourer bound by agreement or contract to serve another person, or shall conceal or harbour any labourer who shall have absented himself without leave from his employment, and shall in either such case fail to prove that he first used reasonable and proper diligence to satisfy himself that such labourer was not bound by agreement or contract to serve another person; or
- (c) shall after receiving notice in writing that a labourer is bound by agreement or contract to serve another person knowingly retain such labourer in his own service;

Penalty.

shall be liable, on conviction, to a fine not exceeding one hundred dollars or to imprisonment of either description for a period not exceeding three months, or to both, in respect of each and every such labourer, and on conviction for a second or subsequent offence under this section to imprisonment for any period not exceeding six months.

Payment of fine
to employer.

(ii) The whole or any portion of any fine recovered under this section may be awarded by the Court before which the conviction is had to the employer of the labourer in respect of whom such conviction may be had.

Wrongful
dismissal or
detention of
labourer.

226. Every employer who without reasonable excuse (the proof whereof shall lie with him) shall

- (a) dismiss from his service without notice (except as hereinbefore provided) any labourer under contract or agreement with him, such contract or agreement not having been duly determined as hereinbefore provided; or

- (b) refuse to allow a labourer whose contract or agreement has been determined in any of the ways hereinbefore provided to leave his service ;

shall be liable, on conviction, to a fine not exceeding fifty dollars or in default to simple imprisonment for a term not exceeding one month, and the whole or any portion of any fine recoverable under this section may be adjudged by the Court to be paid to the labourer. Penalty.

227. If any employer of contract labour who is bound by the terms of his contract to supply a contract labourer free of charge with clothing or other articles shall debit such labourer with such charges, or if any employer who is bound to pay stamp duty or other fees on making a contract under this Enactment or for its endorsement shall charge a contract labourer with such duty or fees he shall be guilty of an offence and be liable, on conviction, to a fine not exceeding fifty dollars. Debiting labourer with improper charges.

228. Any employer who in any way obstructs any labourer in appearing before the Controller in pursuance of this Enactment or fails or neglects to pay his wages within the time provided by this Enactment shall be liable to a fine not exceeding one hundred dollars. Obstruction of labourer by employer.

CHAPTER XXIV.

OFFENCES BY LABOURERS.

229. Every labourer who shall without reasonable cause to be allowed by the Court Offences by labourer.

- (a) neglect or omit to fulfil his contract or neglect or refuse to attend at the time or place arranged to commence or carry on any work or, if there is no special arrangement as to the time, at such time as is customary according to the nature of the employment of such labourer ; or
- (b) leave unfinished or refuse to finish any work agreed or contracted to be done ; or
- (c) be guilty of gross neglect of duty, carelessness in the custody of the property of his employer, disobedience of lawful orders, insolence or other misconduct in the service of his employer ; or
- (d) quit the service of his employer without leave or abscond from the place of his employment or desert, or attempt to desert, from the service of his employer, his contract or agreement not having been duly determined as hereinbefore provided ;

shall be liable, on conviction, for the first offence to a fine not exceeding twenty-five dollars or in default to imprisonment for a term not exceeding one month, and for a second or subsequent offence to a fine not exceeding fifty dollars or to imprisonment of either description for a term not exceeding three months or to both, and the whole or any portion of any fine recoverable under this section may be adjudged by the Court to be paid to the employer.

230. Any labourer who wilfully breaks an agreement or contract, knowing or having reason to believe that the probable consequences of his so doing, either alone or in conjunction with others, will be to cause the stoppage of work in or upon any estate, factory, mine or place of employment in such a manner as may be attended with Wilful breach of agreement or contract by labourer in conjunction with others

serious loss to the owner of the same or serious inconvenience to the public shall be liable, on conviction before the Court, to a fine not exceeding one hundred dollars or to imprisonment of either description for a term not exceeding six months, and upon a second or subsequent conviction for the same offence he shall be liable to a fine not exceeding two hundred dollars or to imprisonment of either description for a term not exceeding twelve months.

Neglect to labour.

231. Any labourer who shall without reasonable excuse neglect or refuse to do as required by his employer at least twenty days' work in any one month, such work being reasonable and proper, shall, on conviction, be liable to imprisonment of either description for a period not exceeding seven days.

Disobedience to orders and refusal to work.

232. Any labourer who without reasonable excuse disobeys any lawful order given by his employer or wilfully and knowingly omits to do any duty necessary to be done by him for the management, discipline and good order of the place of employment shall be liable to a fine not exceeding fifty cents, and for a second or subsequent offence shall also be liable to imprisonment of either description for a period not exceeding fourteen days.

Expenses of arrest.

233. Every labourer convicted under section 229 (d) shall in addition to any punishment be liable to repay to his employer the amount of any moneys, not exceeding ten dollars, which may be proved to have been reasonably expended, whether by way of reward or otherwise, in effecting his arrest and securing his conviction.

Penalty for absence during working hours.

234. A labourer who is absent from his employment without reasonable excuse during working hours shall be liable to a fine not exceeding fifty cents.

Meaning of desertion.

235. (i) A labourer deserts from his employer's service when he is continuously absent from his place of employment for more than twenty-four hours, exclusive of any Sunday or authorised holiday, without leave from his employer or without reasonable excuse, or when he is absent from his place of employment under such circumstances as show that he does not intend to return to perform his agreement or contract.

Meaning of attempt.

(ii) A labourer shall be deemed to attempt to desert from his employer's service if he is found either on or off his place of employment under circumstances from which it may be reasonably inferred that he intends to desert.

Meaning of reasonable excuse.

236. Ill-treatment of a labourer by his employer or the neglect of the employer to fulfil any condition of the labourer's agreement or contract may be deemed to be a reasonable excuse under this Part.

Arrest of deserters and absentees.

237. If any labourer deserts, or attempts to desert, from his employer's service, or is unlawfully absent from his place of employment, or leaves, or attempts to leave, a place in which he has been ordered to remain for medical treatment under the provisions of this Enactment without leave from the officer in charge of such place, any officer of the department of the Controller may without warrant and without the assistance of any police officer (who, nevertheless, shall be bound to give such assistance if called upon to do so) apprehend such labourer wherever he may be found and take him back to the place of employment or to the place in which he was ordered to remain as aforesaid or to a police station.

238. Any labourer who wilfully inflicts on himself any injury or wilfully does any act by which he may be made unable to work, and any person abetting within the meaning of the Penal Code the infliction of such injury or the doing of such act, the injury or act being of such a character as to prevent the labourer from labouring according to the terms of his agreement or contract, shall be liable to imprisonment of either description for a period not exceeding one month.

Labourer disabling himself.

CHAPTER XXV.

GENERAL.

239. If any employer or other person wilfully obstructs or impedes any entry, inspection, enquiry or investigation made under this Enactment or commits, with respect to such entry, inspection, enquiry or investigation made, any offence described in Chapter X of the Penal Code, he shall be punished as provided in Chapter X of the Penal Code.

Penalty for obstructing inspection or enquiry.

240. Every person who is guilty of an offence against the provisions of this Enactment or of any rules made thereunder for which no penalty is otherwise provided shall be liable, on conviction, to a fine not exceeding one hundred dollars and for a second or subsequent offence under the same section or rule committed within one year of the conviction for the former offence to a fine not exceeding two-hundred and fifty dollars.

General penalty.

PART XI.

PROVISIONS RELATING TO PROCEDURE, ACTIONS AND RULES.

CHAPTER XXVI.

PROCEDURE.

241. The Court shall have power to try any offence and to impose any fine or penalty under this Enactment.

Jurisdiction of the Court.

242. The Controller shall have the right to appear and be heard before all inferior Courts, civil or criminal, in any proceeding under this Enactment.

Controller may appear.

243. Any prosecution under this Enactment may be withdrawn by the Controller before judgment, and a fresh prosecution instituted for the same offence under the Penal Code or other law applicable to the circumstances of the case.

Prosecution may be withdrawn.

244. Nothing in this Enactment shall interfere with the operation of the Penal Code or the criminal law in any case in which its provisions may be applicable, but so that no person be punished twice for the same offence.

Penal Code.

245. For the purposes of this Enactment and of the Penal Code, the Controller and all officers duly appointed or authorised under this Enactment shall be deemed to be public servants.

Public servants.

246. For the purpose of any criminal prosecution, every estate, factory, mine or place in which ten or more labourers are employed shall be deemed to be a public place.

Public place.

247. No remedy under any provision of this Enactment shall be enforced against any labourer for neglect or refusal to work, or for absence from work, or for absconding, if at the time of the alleged neglect, refusal, absence or absconding his wages shall have remained unpaid for a period exceeding that by this Enactment prescribed, or exceeding the period (if any) stipulated in his agreement or contract: provided always that at least forty-eight hours before the time of such alleged neglect, refusal, absence, or absconding the labourer shall have demanded from his employer, or from the person representing such employer, the payment of wages due to him, and such employer or representative shall have refused or failed to pay the same.

248. No punishment, whether by way of fine or imprisonment, suffered under the provisions of this Enactment shall, unless the Court so direct, be held to determine any agreement or contract which was in force at the time the offence was committed.

249. Nothing in this Enactment shall operate to prevent any employer or labourer from enforcing their respective civil rights and remedies for any breach or non-performance of an agreement or contract by any suit in Court, in any case in which proceedings are not instituted, or, if instituted, are not proceeded with to judgment and satisfaction under this Enactment.

250. In all proceedings under Chapter XV or under Part VIII the onus of proving that he is not the employer or resident manager or the person whose duty it is under such Chapter or Part or under any rule made thereunder to do or abstain from doing anything shall be on the person who alleges that he is not the employer, resident manager or other person, as the case may be.

251. A copy of the written statement made by any employer under section 66 certified by the Controller as a true copy shall be received in evidence in any prosecution under that section and shall be conclusive evidence of the statement made by the employer to the Controller under the said section.

252. (i) Where under this Enactment an order is made for the payment of money, and the same is not paid as directed, it may be recovered in the manner provided by law for the recovery of fines.

(ii) In the event of any person within the definition of the word "Employer" being subjected to any fine or penalty under the provisions of this Enactment such fine or penalty may, in addition to any other means of recovery, be recovered by distress and sale of the estate, mine or place of employment, or of any property belonging to such estate, mine or place of employment.

253. Subject to any special provision to the contrary contained in this Enactment, from and after the determination of any imprisonment suffered under this Enactment for non-payment of the amount of any fine, compensation, or damages, with the costs assessed and directed to be paid by any order of Court, the amount so ordered shall be deemed to be liquidated and discharged, and the order shall be annulled.

254. When it is alleged by any party to a contract that the condition of a recognizance or bond entered into or given for the fulfilment of the contract under the provisions of this Enactment has not been

performed, the Court, being satisfied thereof, after hearing the parties and the sureties (if any), or in the case of any party or surety not appearing, after proof of service of summons in that behalf, may order that the recognizance or bond be enforced for the whole or part of the sum secured, as to the Court may seem fit.

255. When under this Enactment any Court imposes a fine or enforces the payment of any sum secured by recognizance or bond, the Court may, if it think fit, direct that the whole or any part of such fine or sum when recovered be paid to the party complaining.

Application of
fines and mon-
recovered.

256. The Controller shall make such reports to the Chief Secretary to Government relative to the conduct of the duties of his office in such form and with such particulars as the Chief Secretary to Government may from time to time direct and shall forward a copy of such reports to the Resident of each State to which such reports relate.

Reports by
Controller.

CHAPTER XXVII.

LIMITATION OF LIABILITY OF PERSONS EXERCISING POWERS.

257. (i) No action shall be brought against any person for anything done, or *bonâ fide* intended to be done, in the exercise or supposed exercise of the powers given by this Enactment or by any rules made thereunder

Provisions
regarding
actions.

- (a) without giving to such person one month's previous notice in writing of the intended action and of the cause thereof;
- (b) after the expiration of three months from the date of the accrual of the cause of action;
- (c) after tender of sufficient amends.

(ii) In every action so brought it shall be expressly alleged that the defendant acted either maliciously or negligently and without reasonable or probable cause, and if at the trial the plaintiff shall fail to prove such allegation, judgment shall be given for the defendant.

(iii) Though judgment shall be given for the plaintiff in any such action, such plaintiff shall not have costs against the defendant unless the Court, before which the action is tried, shall certify its approbation of the action.

CHAPTER XXVIII.

PROVISIONS AS TO RULES.

258. (i) The Chief Secretary to Government, in addition to the powers expressly conferred by any other of the provisions of this Enactment, may from time to time make rules

Power to ma-
rules.

- (a) subject to which immigrants may be engaged in the Federated Malay States for service in a country or State to which Indian emigration is authorised;
- (b) to prescribe the ports in the Federated Malay States at which all or any class of immigrant ships may call and the place at such ports at which any such ships shall anchor;
- (c) to prescribe the time at which immigrants shall disembark, and at each port the place at which they shall land and the route by which they shall be conveyed from the landing place to the examination depôt;

- (d) to prohibit all or any class of persons from boarding or communicating with or approaching all or any class of immigrant ships until the immigrants have disembarked;
- (e) to prescribe the information to be given by a creditor to the Controller or Protector or to the keeper of a detention depôt with regard to each immigrant indebted to him for passage money and advances;
- (f) for the management and regulation of depôts established under section 8;
- (g) to prescribe the fees
 - (1) which may be lawfully demanded of an immigrant for the conveyance of such immigrant from an immigrant ship to an examination depôt;
 - (2) which may be lawfully demanded from a creditor for the use of a detention depôt and for the maintenance of an indebted immigrant while detained therein;
 - (3) which may be lawfully demanded from a creditor for the medical examination of an immigrant under section 35.
- (h) to prescribe with regard to estate hospitals
 - (1) the nature of the accommodation and equipment to be provided and maintained;
 - (2) the description and quantities of diets for patients to be provided;
 - (3) the description of drugs and of surgical and medical appliances to be kept in stock; and also
 - (4) the number of dressers, hospital attendants, cooks, scavengers and other necessary servants to be employed;
 - (5) the quantities of each drug and the number of each kind of surgical and medical appliance to be kept in stock;at every such hospital according to the number of patients for whom accommodation is provided therein.
- (i) for the inspection and management of estate hospitals and in particular to prescribe the duties of the resident medical practitioner, and where there is no resident medical practitioner of the dresser in charge, and the registers and records to be kept at every estate hospital in respect of every patient treated thereat, with the form in which such registers and records are to be kept and the particulars to be included therein; and
- (j) to direct that duly authenticated returns of diseases, deaths and other matters relating to estates or estate hospitals be furnished to the Medical Officer and other officers of Government at such times and in such manner as may be specified in such rules;

(k) not inconsistent with the provisions of this Enactment which may in his opinion be necessary to provide for the due carrying into effect of any of the provisions of this Enactment.

(ii) Any person who is convicted of the breach of any rule made under clause (e) or (f) of sub-section (i) shall be liable to a fine not exceeding twenty-five dollars, and any person who is convicted of the breach of any rules made under the other provisions of this section shall be liable to a fine not exceeding five hundred dollars.

Penalty for
breach of rules.

THE FIRST SCHEDULE.
ENACTMENTS REPEALED.
I.—STATE ENACTMENTS.

State.	No. and year.	Short title.
Perak	24 of 1899	The Labourers' Wages Priority Enactment, 1899
Selangor	32 "	" "
Negri Sembilan	24 "	" "
Pahang	3 of 1900	The Labourers' Wages Priority Enactment, 1900
" 	15 of 1901	The Labour Enactment, 1901
" 	8 of 1902	The Labour Enactment, 1901, Amendment Enactment, 1902
Perak	11 of 1904	The Labour Enactment, 1904, No. 1 (General)
Selangor ..	16 "	" "
Negri Sembilan	11 "	" "
Perak	12 "	The Labour Enactment, 1904, No. 2 (Chinese Mining)
Selangor 	17 "	" "
Negri Sembilan	12 "	" "
Perak	19 "	The Labour Enactment, 1904, No. 3 (Chinese Agricultural), Amendment Enactment, 1904
Selangor 	18 "	The Labour Enactment, 1904, No. 3 (Chinese Agricultural)
Negri Sembilan	19 "	The Labour Enactment, 1904, No. 3 Amended (Chinese Agricultural)
Perak	27 "	The Labour Enactments, 1904 Amendment Enactment, 1904
Selangor 	23 "	" "
Negri Sembilan	26 "	" "
Perak	28 "	The Indian Immigration Enactment, 1904
Selangor 	24 "	" "
Negri Sembilan	23 "	" "
Pahang 	19 "	" "
" 	11 of 1906	The Labour Enactment, 1901, Amendment Enactment, 1906

State.	No. and year.	Short title.
Perak	14 of 1907	The Labour Enactment, 1904, No. 1 (General), Amendment Enactment, 1907
Selangor ...	3 "	" " "
Negri Sembilan	3 "	" " "
Perak	3 "	The Labour Enactment, 1904, No. 2 (Chinese Mining), Amendment Enactment, 1907
Selangor ...	4 "	" " "
Negri Sembilan	4 "	" " "
Perak	15 "	The Labour Enactment, 1904, No. 3 (Chinese Agricultural), Amendment Enactment, 1904, Amendment Enactment, 1907
Selangor ...	5 "	The Labour Enactment, 1904, No. 3 (Chinese Agricultural), Amendment Enactment, 1907
Negri Sembilan	5 "	" " "
Perak	5 "	The Indian Immigration Enactment, 1904, Amendment Enactment, 1907
Selangor ...	1 "	" " "
Negri Sembilan	6 "	" " "
Pahang ...	6 "	" " "
Perak	6 of 1909	The Truck Enactment, 1909
Selangor ...	7 "	" "
Negri Sembilan	7 "	" "
Pahang ...	10 "	" "

II.—FEDERAL ENACTMENTS.

No. and year.	Short title.
11 of 1910	The Chinese Immigrants Enactment, 1910
12 "	The Labour Enactments, 1904, No. 1 (General), Amendment Enactment, 1910
19 "	The Estate Labourers (Protection of Health) Enactment, 1910
20 "	The Labour Enactments, 1904, No. 2 (Chinese Mining), Amendment Enactment, 1910
21 "	The Labour Enactments, 1904, No. 3 (Chinese Agricultural), Amendment Enactment, 1910
22 "	The Indian Immigration Enactments, 1904, Amendment Enactment, 1910
2 of 1911	The Tamil Immigration Fund Enactment, 1911
16 "	The Labour Enactment, 1911

THE SECOND SCHEDULE.

Form A (Section 44).

I hereby certify that the person herein named and described is not subject to the provisions of Part II of "The Labour Code, 1912."

Signed

Dated.....

Controller of Labour.

Name.	Father's name.	Age.	Sex.	Religion and caste (if any).	Place of abode in India.	Calling.	General description and distinctive marks.

Form B (Section 60).

For.....Emigrants shipped by s.s.....on.....

By.....For.....

Ticket No.	Name.	Father's name.	Sex.	Age.	Religion or caste.	Place of abode.	Dependent.	Height.	Descriptive marks.	Wages and period of service.	Place of intended service.	Remarks.

I hereby certify that the emigrants herein mentioned and described have been examined and declared physically fit for work as agricultural labourers (*or as manual labourers, as the case may be*), and that having had the terms and conditions under which they promise to labour fully explained to them they have severally stated that they fully understand the same and are ready on arrival at their destination to enter into contracts to labour accordingly.

Signed

Emigration Agent,

Dated.....

Madras.
Negapatam.

THE THIRD SCHEDULE.
(Section 66).

No.	Name.		Engagement.		Name of last employer.	Place of last employment.	Remarks (if any).
	Of labourer.	Of employer.	Date of	Place of			

I certify that the above is a correct statement as required by section 66 of the Labour Code, 1912, of the labourers engaged by me

Dated.....

.....
Signature of Employer.

THE FOURTH SCHEDULE.
SCALE OF RATIONS FOR ADULTS.
(Section 65).

Rice	...	...	...	...	...	1½ lb. per day
Dhall	...	...	...	...	...	2 lb. per month
Salt fish	...	...	...	...	...	2 „ „
Ghee or oil	...	...	...	...	...	1 „ „
Salt	...	...	...	...	...	1 „ „

These rations shall be issued weekly or otherwise as approved by the Controller.

RULES, ETC.



FEDERATED MALAY STATES.

“THE LABOUR CODE, 1912.”

Gazette Notification No. 3109, November 30, 1912, No. 53, Vol. IV.

IT is hereby notified that in exercise of the powers conferred by section 156 of “The Labour Code, 1912,” the Indian Immigration Committee has, with the consent of the High Commissioner, prescribed the following rates to be paid for the first quarter of the year 1913:

(i) A rate of \$2 to be paid by every employer in respect of every Indian labourer employed or working on the place of employment during the quarter.

(ii) A further rate of \$1 to be paid by every employer who shall have employed during the quarter Indian labourers in excess of the number of adult Indian labourers imported by him with free passages provided by the Indian Immigration Committee during the twenty-four months preceding the commencement of the quarter.

Gazette Notification No. 3139, December 6, 1912, No. 55, Vol. IV.

IN exercise of the powers vested in him by section 1 of “The Labour Code, 1912,” the Chief Secretary to Government hereby appoints the 10th day of December, 1912, for the coming into force of the above-mentioned Enactment throughout the Federated Malay States.

Gazette Notification No. 3142, December 6, 1912, No. 55, Vol. IV.

IN exercise of the powers vested in him by section 9 of “The Labour Code, 1912,” the Chief Secretary to Government prescribes the following ports and

places to be ports and places at which immigrants may land in or enter the Federated Malay States :

Ports.					Places.
Gula	...	...	...	...	Parit Buntar
Kuala Kurau					
Port Weld					
Sitiawan					
Telok Anson					
Port Swettenham					
Port Dickson	...	...	...	...	Gemas
Kuantan					

Gazette Notification No. 3144, December 6, 1912, No. 55, Vol. IV.

IN exercise of the powers conferred upon him by section 203 (ii) of "The Labour Code, 1912," the Controller of Labour, with the approval of the Chief Secretary to Government, hereby prescribes a rate of twenty-four cents *per diem* as the rate at which an employer may recover from a labourer who was employed under an agreement the expenses of his maintenance and treatment in an estate hospital for any period in excess of thirty days.

Gazette Notification No. 3145, December 6, 1912, No. 55, Vol. IV.

IN exercise of the powers vested in him by section 204 of "The Labour Code, 1912," the Controller of Labour, with the approval of the Chief Secretary to Government, hereby prescribes a rate of twenty-four cents *per diem* as the rate at which a resident manager shall pay the expenses of the maintenance and treatment of a labourer in a Government hospital.

Gazette Notification No. 3146, December 6, 1912, No. 55, Vol. IV.

RETURN under section 113 (i) of "The Labour Code, 1912," of agricultural labourers employed on..... estate during the quarter ending.....19...

This return should be forwarded by the managers of estates to the Labour Office for the State in the months of January, April, July and October of each year.

Nationality.	Number employed on 1st 19...—i.e., 1st day of quarter.	Additions made during the { first second } quarter { third fourth }				Total of columns 1 and 5.	Deductions made during the { first second } quarter of { third fourth } 19....				Number remaining on..... 19...—i.e., last day of quarter.	Remarks.
		Imported.	Engaged locally.	Deserters during a previous quarter recovered in this quarter.	Total additions.		Died.	Deserters not re- covered.	Discharged.	Total deductions.		
	1	2	3	4	5	6	7	8	9	10	11	12
Indians ...												
Chinese ...												
Malayanese ...												
Others ...												

Definition of Labourer.—“Labourer” includes every Asiatic artificer, miner, servant in husbandry and every other Asiatic employed for the purpose of personally performing any manual labour or of recruiting or supervising Asiatics for or in the performance of such labour, but does not include domestic servants.

All labourers whether on check-roll or on contract must be included.

.....Estate,
Date.....19...

Signature of Employer.....
Name of Company (if any).....

Gazette Notification No. 3147, December 6, 1912, No. 55, Vol. IV.

In pursuance of the powers vested in him by sections 5, 75, 199 and 258 of “The Labour Code, 1912,” the Chief Secretary to Government hereby makes the following rules under the said Enactment:

1. “Controller” means the Controller of Labour appointed under section 5 of the Enactment and, subject to the limitations which may from time to time be prescribed under the said section, includes Deputy Controllers of Labour and Assistant Controllers of Labour appointed under the said section.

“Depôt” means a depôt established under section 8 of the Enactment.

“The Enactment” means “The Labour Code, 1912.”

“Medical Officer” has the meaning assigned to that expression by the Enactment.

2. Port Swettenham is prescribed to be a port at which all classes of immigrant ships may call.

3. No person shall communicate or attempt to communicate with a tongkang or lighter in which immigrants are being disembarked under the provisions of Part II of "The Labour Code, 1912," or with the immigrants who are being conveyed therein.

4. The depôts shall be used primarily for the accommodation of immigrants who have received a free passage from India provided from the Indian Immigration Fund.

5. No person shall without the written permission of the Controller enter or attempt to enter a dépôt or communicate or attempt to communicate with any immigrant detained therein.

6. Any immigrant detained in a dépôt who shall be found to be suffering from any infectious or contagious disease may be sent to a hospital or quarantine station.

7. Any employer, or any person acting on behalf of an employer, who removes any immigrant from a dépôt shall if so required by the officer in charge of the dépôt sign at the time of such removal an acknowledgment that such an immigrant has been so removed.

8. The Controller may refuse to re-admit to a dépôt any immigrant who has been removed therefrom by an employer or by any person acting on behalf of an employer.

9. Immigrants detained in a dépôt will be provided with food. No immigrant will be permitted to bring food into a dépôt.

10. In the subsequent rules, number 11 to number 40, "Hospital" means an estate hospital.

11. New hospitals shall be erected in open clearings as far removed as possible from jungle and swamps. A space of not less than 200 feet all round all hospitals shall be kept clear of jungle. No cultivation of any kind shall be permitted within 200 feet of a hospital if such cultivation would, in the opinion of the Medical Officer, interfere with the ventilation or general sanitary condition of such hospital.

NATURE OF ACCOMMODATION.

12. The accommodation for the number of patients for which accommodation is from time to time required by order of the Controller to be made shall be in a proportion of not less than four beds for every 100 labourers employed on the estate exclusive of the provision required to be made under rule 14, and may be in such higher proportion, not exceeding eight beds for every 100 labourers, as the Controller shall direct, and shall unless the sanction of the Controller is obtained to the contrary consist of buildings of a permanent character.

13. Separate accommodation to the satisfaction of the Medical Officer shall be provided for females, and separate accommodation shall also be provided if the Controller so directs for patients of any particular nationality or race.

14. A separate additional ward or wards shall be kept for use in special cases (*e.g.*, for dysentery and diarrhoea cases), and such separate ward or wards shall provide accommodation to the extent of one bed for every 100 labourers employed on the estate.

15. Unless special sanction in writing from the Controller has been obtained wards must be constructed in accordance with approved type plans, copies of which may be obtained from the Medical Officer.

16. A bed shall be provided for each patient, and the minimum superficial area allowed for each bed in ordinary wards shall be 60 square feet. In the wards for use in special cases it shall be 90 square feet.

17. A kitchen, bathing tanks, latrines and a mortuary shall be erected for each hospital under separate roofs at a suitable distance from the wards and from one another. None of these buildings shall be constructed except in accordance with a plan approved by the Medical Officer.

18. A suitable dispensary shall be provided at each hospital to the satisfaction of the Medical Officer.

19. The beds for the patients shall consist of three separate hardwood planks, each ten inches wide, and of uniform thickness, resting on iron trestles.

EQUIPMENT.

20. Mosquito curtains of a type approved by the Medical Officer shall be provided in the proportion of three for every two beds.

21. Two suits of hospital clothing and one pillow shall be provided per bed and blankets in the proportion of three for every two beds.

22. Bed pans and other utensils shall be provided for the use of patients unable to leave their wards.

Enamelled iron chamber pots with covers shall be provided for all diarrhoea and dysentery cases. The excreta of all such cases shall be disinfected before being disposed of.

23. All articles of equipment shall be cleansed as often as may be necessary—and those used in the wards for use in special cases shall not be used in the ordinary wards.

DIETS, MEDICINES, INSTRUMENTS, ETC.

24. The scales of diets shall be those set out in schedule A attached, but extra articles of diet and medical comforts shall be provided as ordered by the visiting medical practitioner or by the person in charge of the hospital. Copies of the scales of diets in English, Tamil, Malay and Chinese shall be hung up in each ward.

25. There shall be kept in stock in each hospital the medicines and preparations specified in schedule B hereto, to the amounts mentioned in the said schedule, with the necessary apparatus for compounding and dispensing, and such other medicines and preparations as may be specially ordered by the medical practitioner or dresser in charge of the hospital or by the Medical Officer.

26. For the purpose of satisfying himself that food and drugs are sound and of good quality the Medical Officer may from time to time without payment take samples of any food or drug for analysis.

27. The following instruments and appliances shall also be provided in each hospital—namely :

- One pocket case of surgical instruments ;
- One Higginson's enema syringe ;
- One rubber stomach tube and funnel ;
- Three catheters, sizes 1, 3 and 9, or 2, 4 and 8 ;
- Three clinical thermometers ;
- One hypodermic syringe ;
- A sufficiency of surgical dressings ;
- Two bed pans ;
- A microscope of a type approved by the Medical Officer if ordered by him ;
- Such other instruments and appliances as may be specially ordered by the Medical Officer with the approval of the Controller.

SUBORDINATE STAFF.

28. The number of dressers shall be not less than one for every 36 patients for whom there is accommodation and the number of attendants (male and female) shall be such as the Medical Officer, subject to the approval of the Controller, may require. Cooks, dhobies and scavengers shall be employed in such numbers as the Medical Officer considers necessary according to the number of patients in hospital.

MANAGEMENT.

29. The registered medical practitioner mentioned in section 202 of the Enactment or dresser in charge, as the case may be, shall live in the immediate vicinity of his hospital ; he shall, subject to the supervision of the private medical practitioner mentioned in section 206, have the immediate care of all hospital patients and shall see that all treatment ordered is carried out. The hospital staff shall for the performance of their duties be under his direction and he shall report any neglect of duty on their part to the private medical practitioner and to the resident manager of the estate.

30. The registered medical practitioner or the dresser in charge, as the case may be, shall see that his hospital is kept clean and in order and that any directions of the private medical practitioner or the Medical Officer with regard to these points are carried out. Each ward shall be swept twice a day and the floor washed at least once a week. Latrines shall be cleaned daily and their contents buried or otherwise disposed of to the satisfaction of the Medical Officer.

31. The registered medical practitioner or the dresser in charge, as the case may be, shall see that the supply of medicines is kept up and that poisons are kept under lock and key and that the instruments and general equipment of his hospital are kept in order, he shall keep the nominal registers and any other hospital books ; he shall also indent for the hospital diets, according to the authorized scales, in sufficient numbers, as well as for any extra articles of diet that may be necessary and shall report to the private medical practitioner or to the resident manager any delay in the supply of such diets and extras.

32. An attendance register of the staff shall be kept in every hospital.

33. An in-patient register shall be kept. In-patient registers, temperature charts and treatment sheets shall be in the forms used in Government hospitals. Separate records shall be kept of out-patients treated, giving date, name and disease.

34. Monthly and annual returns shall be furnished to the Medical Officer in the form in schedule C, whether an estate has its own hospital or not. The return for each month shall reach the Medical Officer not later than the 10th of the following month and the annual returns not later than the 20th of January.

35. There shall be kept in every hospital a visitors' book in which the Medical Officer and the visiting medical practitioner shall, and any other inspecting officer may, record his visits and any remarks regarding the management of the hospital.

36. Every employer shall forthwith, after receipt of a notice in writing from the Medical Officer notifying him that any of the above rules has not been or is not being complied with in any particular specified in such notice, take such steps as may be necessary to secure that the rule is thereafter complied with.

LATRINE ACCOMMODATION, ETC.

37. On every estate there shall be sufficient sanitary accommodation provided to the satisfaction of the Medical Officer for all persons residing or employed thereon.

38. Pit, trench or other latrines shall be constructed on every estate for the use of all labourers employed on the estate.

39. No pit, trench or other latrine shall be constructed in any such position as shall, in the opinion of the Medical Officer, cause it to be likely to become a nuisance or dangerous to the health of persons residing or employed in the vicinity.

40. A sufficient supply of disinfectants, dry earth or lime shall always be available for the purpose of keeping all latrines in a sanitary condition.

SCHEDULE A.

DIET SCALES.

DIET No. 1.

FULL DIET FOR CHINESE.

14	tahils	parboiled rice ;
$\frac{1}{2}$	tahil	dhol ;
4	tahils	fresh beef (free from bone) twice a week ;
4	„	pork „ „
4	„	fish (free from head and tail) twice a week ;
4	„	dried salt fish „ once „
6	„	fresh green vegetables ;
$\frac{1}{4}$	tahil	salt ;
$\frac{1}{4}$	„	coconut oil ; kachang or gingelly oil ;
$\frac{1}{8}$	„	curry-stuffs ; *
$\frac{1}{10}$	„	tea. †

* Curry-stuffs to consist of : tamarind, garlic, chillies, onions, black pepper, turmeric, cumin seeds, coriander seeds ; not less than 20 per cent. of the mixture to be tamarind.

† To provide weak tea for drinking purposes in all wards.

Three hen's eggs, three duck's eggs, four tahils of mutton (free from bone), four tahils of goat (free from bone) or eight tahils of chicken may be substituted in the daily ration issued in those hospitals where fresh beef, fresh pork or fresh fish cannot be obtained.

Where it is necessary to modify the ration in respect of meat and fish, it shall be arranged that any of the articles so substituted are not issued on two days in succession.

DIET No. 2.

FULL DIET FOR TAMILS AND MALAYS.

- 14 tahils parboiled rice;
- 3 eggs twice a week;
- 4 tahils fresh goat (free from bone) twice a week;
- 4 „ fresh fish (free from head and tail) twice a week;
- 4 „ dried salt fish „ once „
- 6 „ fresh green vegetables;
- $\frac{1}{4}$ tahlil salt;
- $\frac{1}{4}$ „ coconut oil;
- $\frac{1}{2}$ „ dholl;
- 1 coconut for eight patients;
- $\frac{2}{3}$ tahlil curry-stuffs; *
- $\frac{1}{10}$ „ tea. †

Where fresh fish cannot be obtained, dried salt fish may be substituted. Also where and when fresh beef or goat cannot be obtained three hen's or duck's eggs may be substituted in the daily rations

Where substitutions are necessary it shall be arranged that the same article is not issued on two days in succession.

DIET No. 3A.

HALF DIET.

- 30. ozs. fresh cow's milk; ‡
- 6 tahils parboiled rice;
- 4 „ bread;
- 2 „ sago or soojee;
- $\frac{1}{4}$ tahlil salt;
- $\frac{1}{2}$ „ sugar;
- $\frac{1}{10}$ „ tea. †

DIET No. 3B.

HALF DIET.

- 6 $\frac{3}{4}$ tahils soup meat;
- 2 hen's eggs;
- 6 tahils parboiled rice;
- 4 „ bread;
- 2 „ sago or soojee;
- $\frac{1}{4}$ tahlil salt;
- $\frac{1}{2}$ „ sugar;
- $\frac{1}{10}$ „ tea. †

* Curry-stuffs to consist of: tamarind, garlic, chillies, onions, black pepper, turmeric, cumin seeds, coriander seeds; not less than 20 per cent. of the mixture to be tamarind.

† To provide weak tea for drinking purposes in all wards.

‡ If tinned milk is substituted for fresh milk the brand and dilution must be such as are approved by the Medical Officer.

DIET No. 4.

MILK DIET.

60 ozs. fresh cow's milk; ‡
 4 tahils ground rice;
 $\frac{1}{2}$ tahil salt;
 $\frac{1}{2}$ „ white sugar;
 $\frac{1}{10}$ „ tea. †

DIET No. 5.

FULL DIET FOR SIKHS.

12 tahils wheat flour;
 6 „ fresh green vegetables;
 $\frac{1}{2}$ tahil salt;
 $\frac{1}{2}$ „ curry-stuffs: *
 2 tahils ghee;
 2 duck's eggs;
 1 tahil sugar;
 10 ozs. fresh cow's milk; ‡
 $\frac{1}{10}$ oz. tea. †

The quantities of all articles in above diet scales are the daily amounts except where otherwise specified.

SCHEDULE B.

LIST OF MEDICINES.

Carbolic acid (pure) ...	1 lb.	Tincture opium ...	8 ozs.
Dilute sulphuric acid	1 „	„ ginger ...	8 „
Nitrate of silver (lunar caustic) ...	1 oz.	Jeyes' or other purifier	10 gals.
Sulphate of copper (blue stone) ...	8 ozs.	Goa powder ...	8 ozs.
Resin plaster ...	3 lbs.	Spirit of nitrous æther	1 lb.
Lint ...	2 „	Zinc sulphate ...	4 ozs.
Blistering fluid ...	8 ozs.	Lead acetate ...	4 „
Sulphate of magnesia (Epsom salt) ...	2 lbs.	Wine of ipecacuanha ...	8 „
Extract of opium ...	1 oz.	Nitrate of potash ...	8 „
Castor oil ...	2 qts.	Common liniment ...	2 lbs.
Oil of peppermint ...	1 oz.	Prepared chalk ...	$\frac{1}{2}$ lb.
Compound jalap powder ...	1 lb.	Sulphur ...	1 „
Dover's powder ...	8 ozs.	Calomel ...	1 oz.
Iodide of potassium ...	8 „	Ipecacuanha powder ...	8 ozs.
Iodoform ...	8 „	Vaseline ...	10 lbs.
Quinine ...	2 lbs.	Boracic acid ...	1 lb.
Santonine ...	1 oz.	Tannic „ ...	4 ozs.
Tincture of asafoetida	8 ozs.	Ammon. carb. ...	2 lbs.
„ catechu ...	1 lb.	Hydrarg. perchlorid. ...	2 ozs.
„ iron (steel drop) ...	1 „	Liq. arsenicalis ...	8 „
„ iodine ...	1 „	Chloroform ...	1 lb.
„ kino ...	1 „	Liq. ammon. acetatis ...	2 lbs.
		Phenacetin ...	1 oz.
		Beta-naphthol ...	8 ozs.
		Eucalyptus oil ...	8 „
		Liq. strychnine ...	$\frac{1}{2}$ oz.
		Æther, pure ...	8 ozs.

* Curry-stuffs to consist of: tamarind, garlic, chillies, onions, black pepper, turmeric, cumin seeds, coriander seeds; not less than 20 per cent. of the mixture to be tamarind.

† To provide weak tea for drinking purposes in all wards.

‡ If tinned milk is substituted for fresh milk the brand and dilution must be such as are approved by the Medical Officer.

SCHEDULE C.

1.—RETURN OF SICK FOR THE

YEAR
MONTH

19...

ESTATE OR ESTATE HOSPITAL AT.....

Diseases.	Remained from previous month.	Admitted.	Total treated.	Discharged.	Transferred.	Absconded.	Died.	Remaining.	Remarks.
Dysentery								
Diarrhoea								
Ankylostomiasis								
Malaria								
Anæmia								
Beri-beri								
Phthisis								
Pneumonia								
Syphilis								
Gonorrhœa								
Ulcer								
Abscess								
Wound								
Ophthalmia								
Other diseases {	...								
	...								
	...								
	...								
Total ...									

II.—

YEARLY
MONTHLY

 SUMMARY OF ADMISSIONS, DEATHS AND LABOUR FORCE OF EACH ESTATE SERVED BY THE ABOVE HOSPITAL.

Name of estate.	Nationality.	Admis- sions.	Deaths amongst labour force only.		Labour force of each nation- ality.
			In hospital.	Outside hospital.	
	Indians ...	...		
	Chinese ...	...		
	Javanese ...	...		
	Others ...	...		

Date.....19...

.....
*Registered Medical Practitioner or
Dresser in Charge.*

Gazette Notification No. 3325, December 20, 1912, No. 57, Vol. IV.

I.

RULES made by the Indian Immigration Committee under section 161 (ii) (a) of the Labour Code :

1. Free or assisted tickets for *bonâ fide* labourers and their families may be issued on behalf of the Indian Immigration Committee in Negapatam by the Superintendent of the Emigration Depôt, and in Madras by the Emigration Agent

- (a) to all holders of kangani licences or recruiters' licences issued on the authority of the Committee ;
- (b) to all labourers and their families who have not been recruited by any kangani or recruiter, but present themselves at the Government Depôts at Negapatam and Madras and promise to work in the Straits Settlements, Federated Malay States, Johore, Kedah or Kelantan.

2. Kangani licences authorizing a kangani to recruit labour for a particular estate can be obtained only from the Deputy Controller of Labour, Penang.

3. Recruiters' licences giving a general authority to recruit labour for the Straits Settlements, Federated Malay States, Johore, Kedah or Kelantan can be obtained only from the Emigration Agent in Madras.

4. Every kangani licence shall show the amount of commission payable for each labourer recruited and the wages payable to labourers to be recruited and shall stipulate that nothing shall be recovered from any labourer for expenses incurred on his behalf or advance made to him previous to his arrival at the place of employment.

5. (i) The Controller or Deputy Controller of Labour may refuse to issue kangani licences and may cancel licences previously issued for an employer

- (a) who has been convicted of an offence against the provisions of "The Labour Code, 1912" ;
- (b) whose assessment under Chapter XIII of the Labour Code for any quarter has not been paid at the expiration of six months from the date of receipt of the assessment notice ;
- (c) who has failed to observe the conditions set forth on kangani licences previously issued to him.

Provided that an employer who is dissatisfied with the decision of the Controller or Deputy Controller may appeal to and appear personally before the Indian Immigration Committee, whose decision in the matter shall be final.

(ii) The Controller or Deputy Controller may in addition cancel or suspend any such licences ; such cancellation or suspension shall be reported by him to the Indian Immigration Committee at their next meeting.

6. The Controller or Deputy Controller of Labour may refuse to issue a kangani licence to a kangani whom he considers to be unsuitable and may cancel the licence of any kangani on reasonable proof of misconduct.

7. No kangani licence will be granted to any applicant who appears to be under the age of 21 years.

II.

RULES made under section 160 (v) of the Labour Code :

1. In cases where a labourer works on daily wages, the work actually performed in respect of which he is credited in the register with one day's full wages shall constitute a day's work.

2. In cases where payment is made for overtime or for work on contract or piece-work let to a contractor or sub-contractor a day's work shall be the amount of work performed for a total payment of 40 cents.

3. In cases where a labourer is under an agreement, written or verbal, to pay a percentage to an employer on the value of the commodities produced or won by him on a place of employment, or to sell all such commodities to an employer, each calendar month for which he works shall be reckoned at 25 days' work ; and if such a labourer works for less than a calendar month, the work performed on every day on which he is so employed shall be reckoned as five-sixths of a day's work.



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1912.

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TYPE PLAN OF GENERAL DISEASES WARD

— FOR —

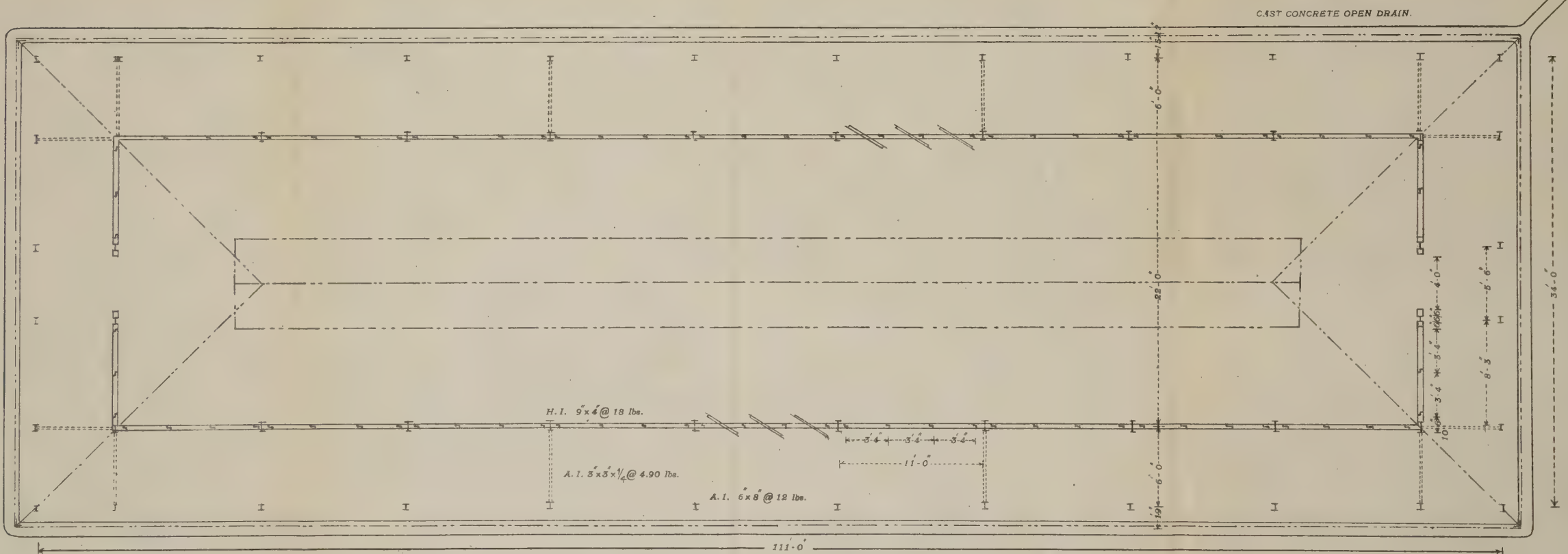
36 PATIENTS,

SCALE:- 8 Feet to 1 Inch:



ELEVATION

- One 6" iron barrel bolt to each door.
- One 6" .23 iron barrel bolt to each main door.
- One 6" iron mortice lock to each main door.
- All exposed iron & wood-work to be painted with oil paint.



PLAN

This ward may be built with temporary materials, provided the following essentials are adhered to:-

Concrete floor with barrel to concrete drains.

4" air space between floor & sides.

18" air space between post-plate & sides.

Wooden ceiling under purlins.

Jack roof.

Ceiling to stop at jack roof.

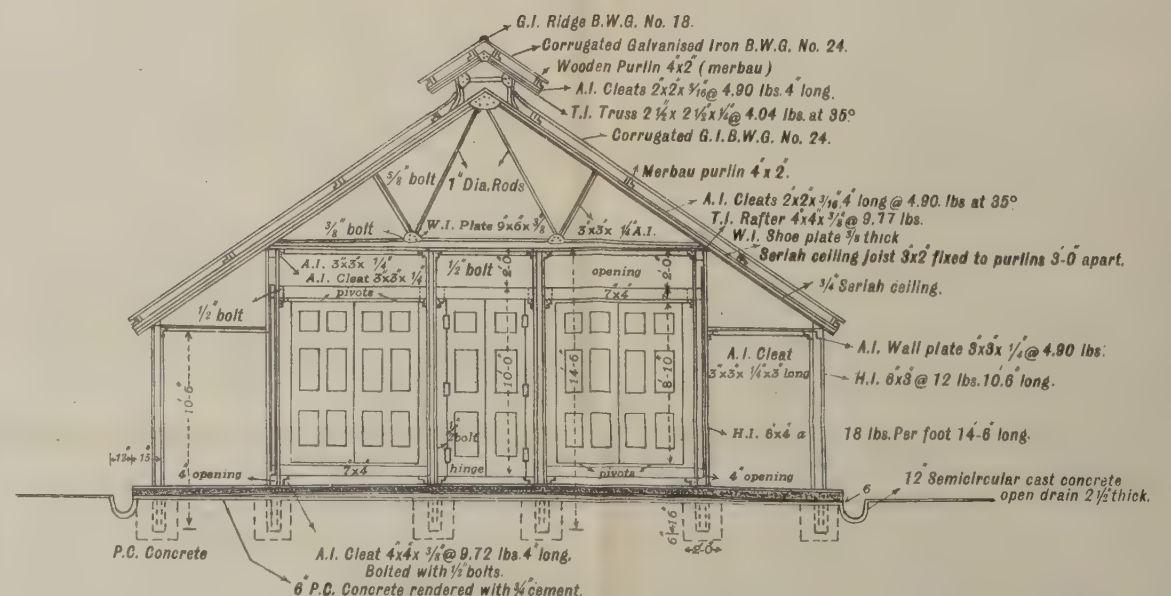
Outlet drain to be carried to such a distance from the building as to satisfy the H.O.

Minimum floor space per patient

For general diseases wards 60 sup.ft.

For dysentery or Isolation wards 90 sup.ft.

The width of the verandahs may be reduced to 5'-0" provided the width of the wards is increased to 24'-0".



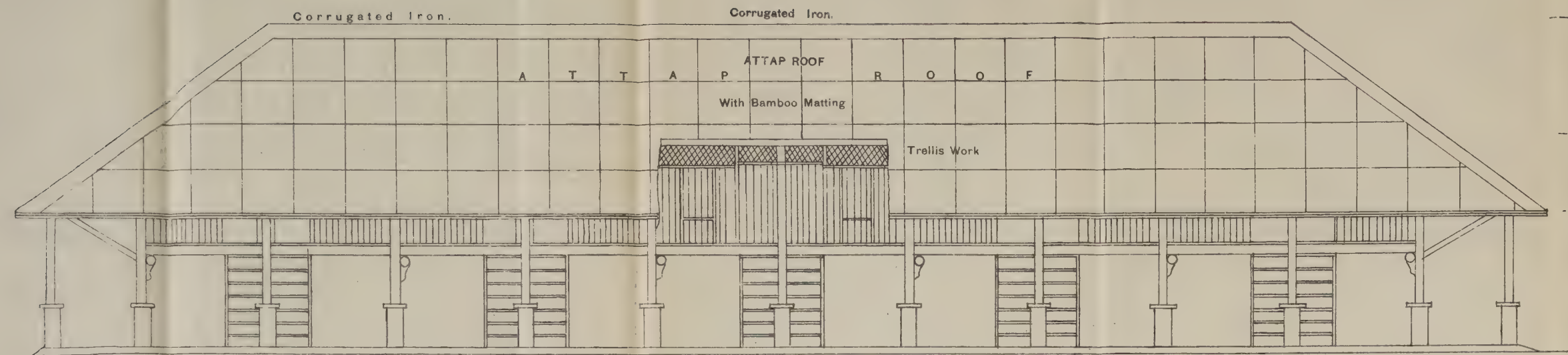
SECTION

PLAN OF COOLIE LINES

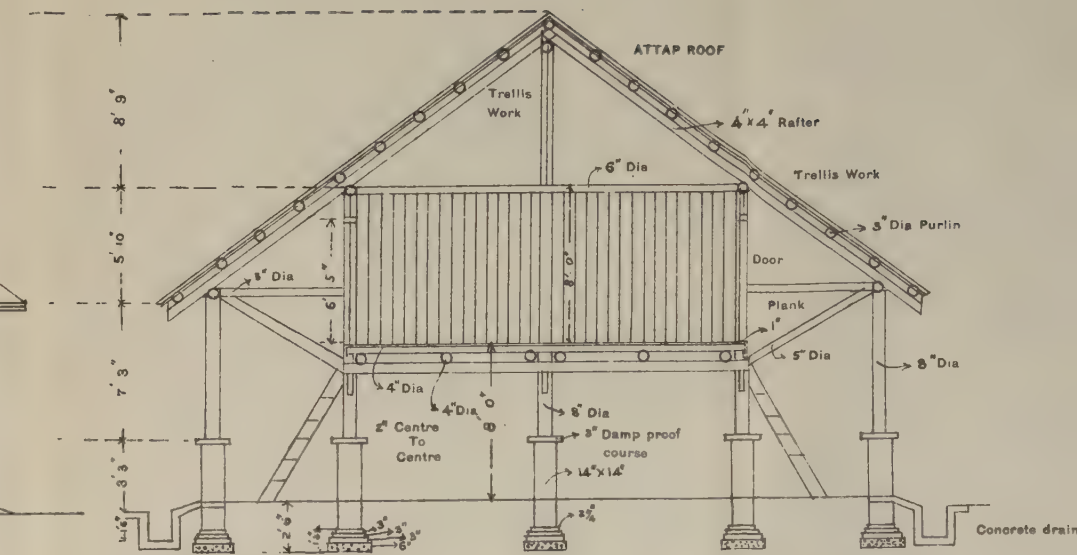
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8 Ft. TO AN INCH.

TYPE "A"



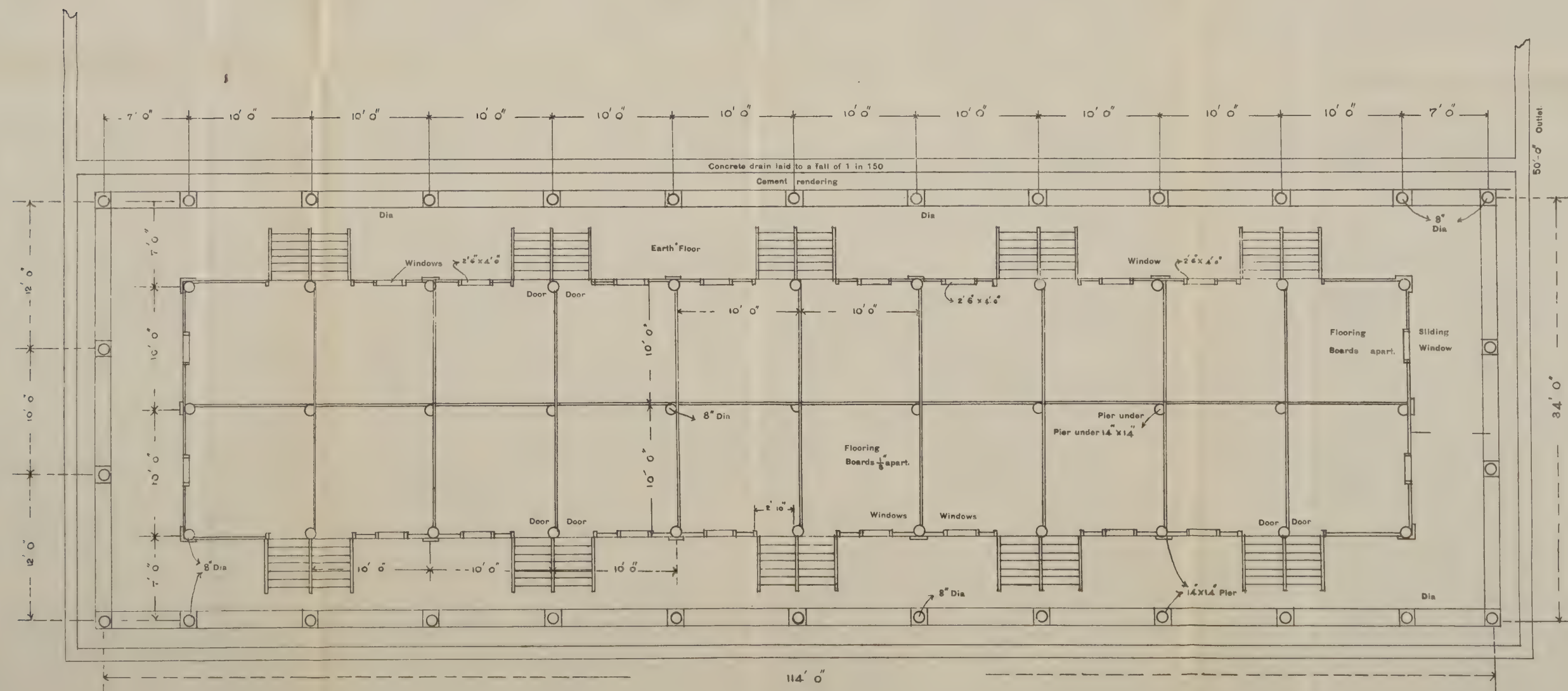
ELEVATION



SECTION

Note

This plan has been approved by The
Chief Secretary, in accordance with
provisions of Section 7. Enactment
19 of 1910 "Health Labourers Enactment."



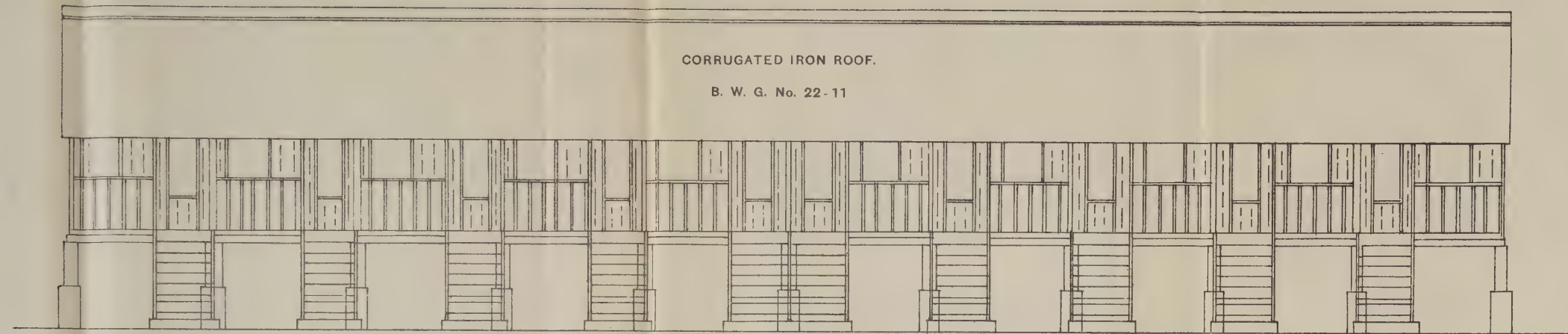
PLAN

PLAN OF COOLIE LINES

10 5 0 10 20 30 40 50

8 FEET=TO AN INCH

TYPE "B"



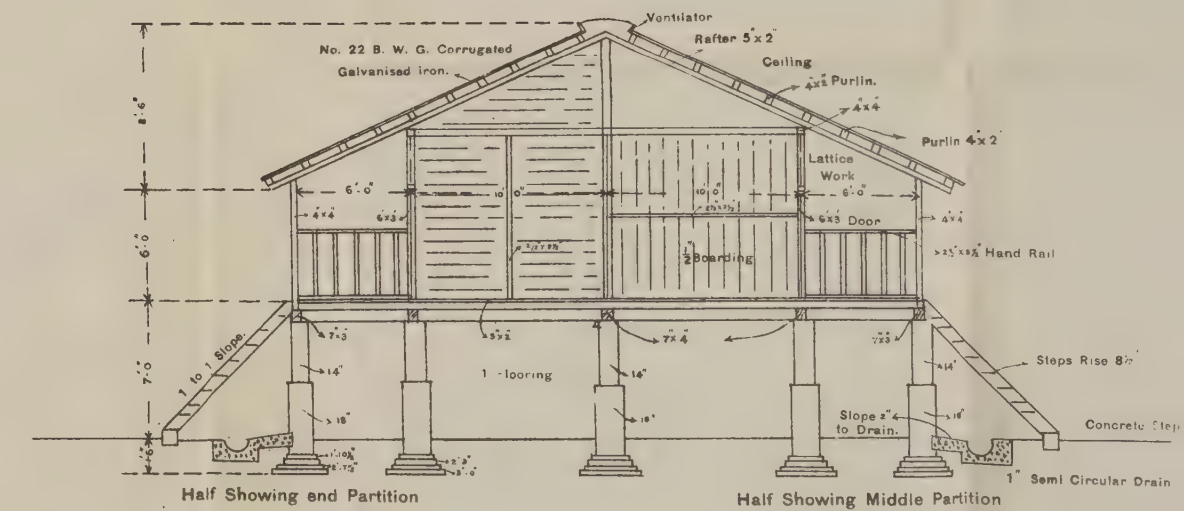
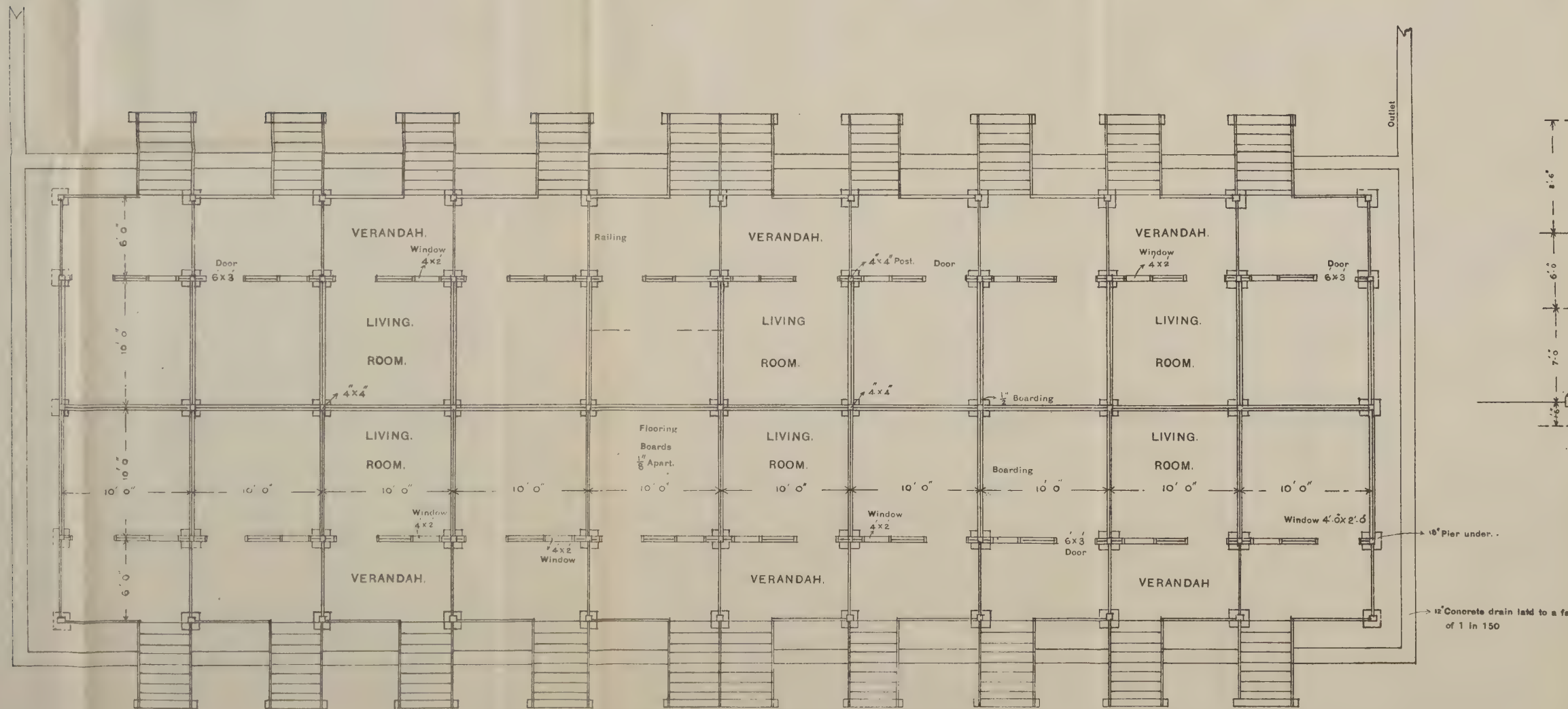
ELEVATION

Note

This plan has been approved by The
Chief Secretary in accordance with

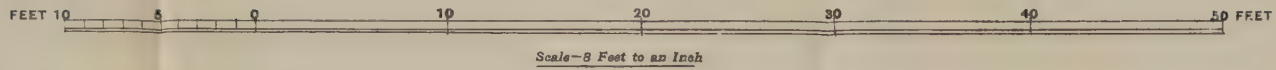
provisions of Section 7. Enactment

19 of 1910 "Health Labourers Enactment."

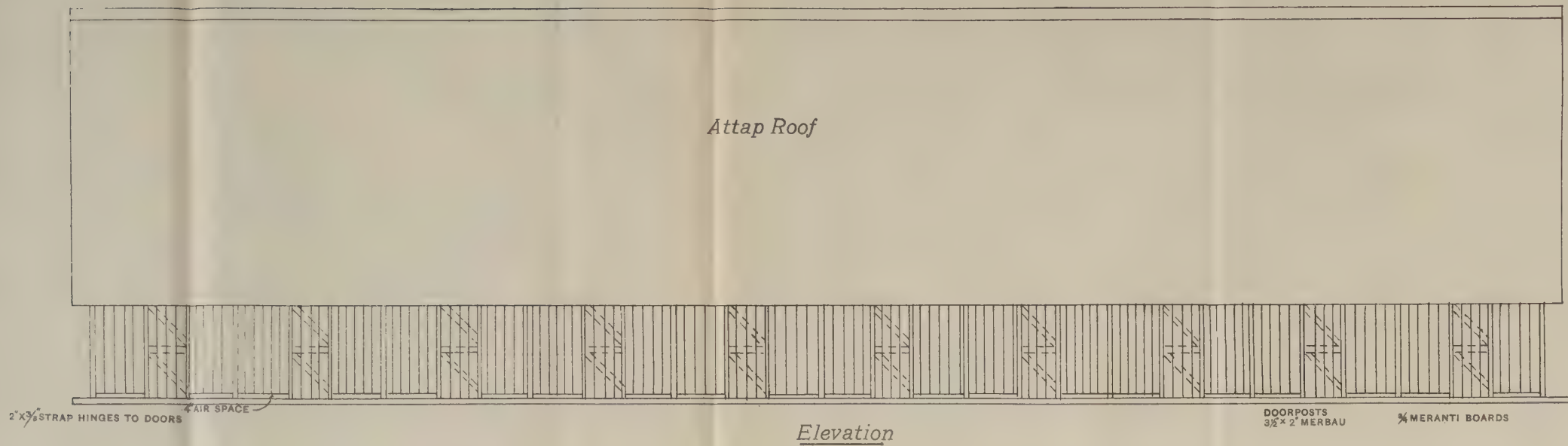


SECTION

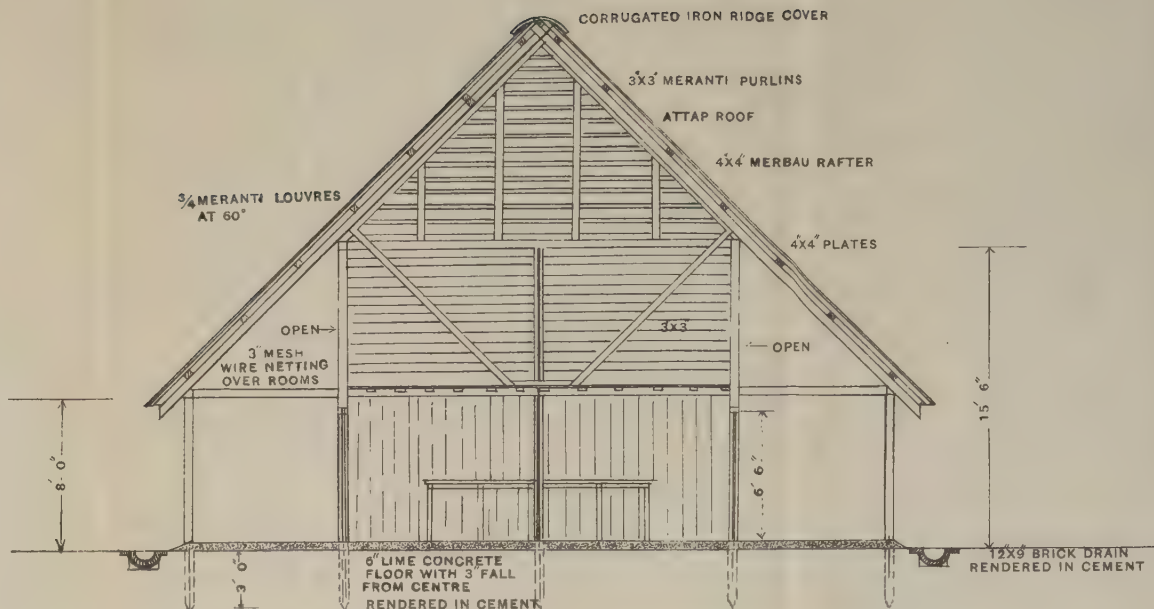
PLAN OF COOLY LINES



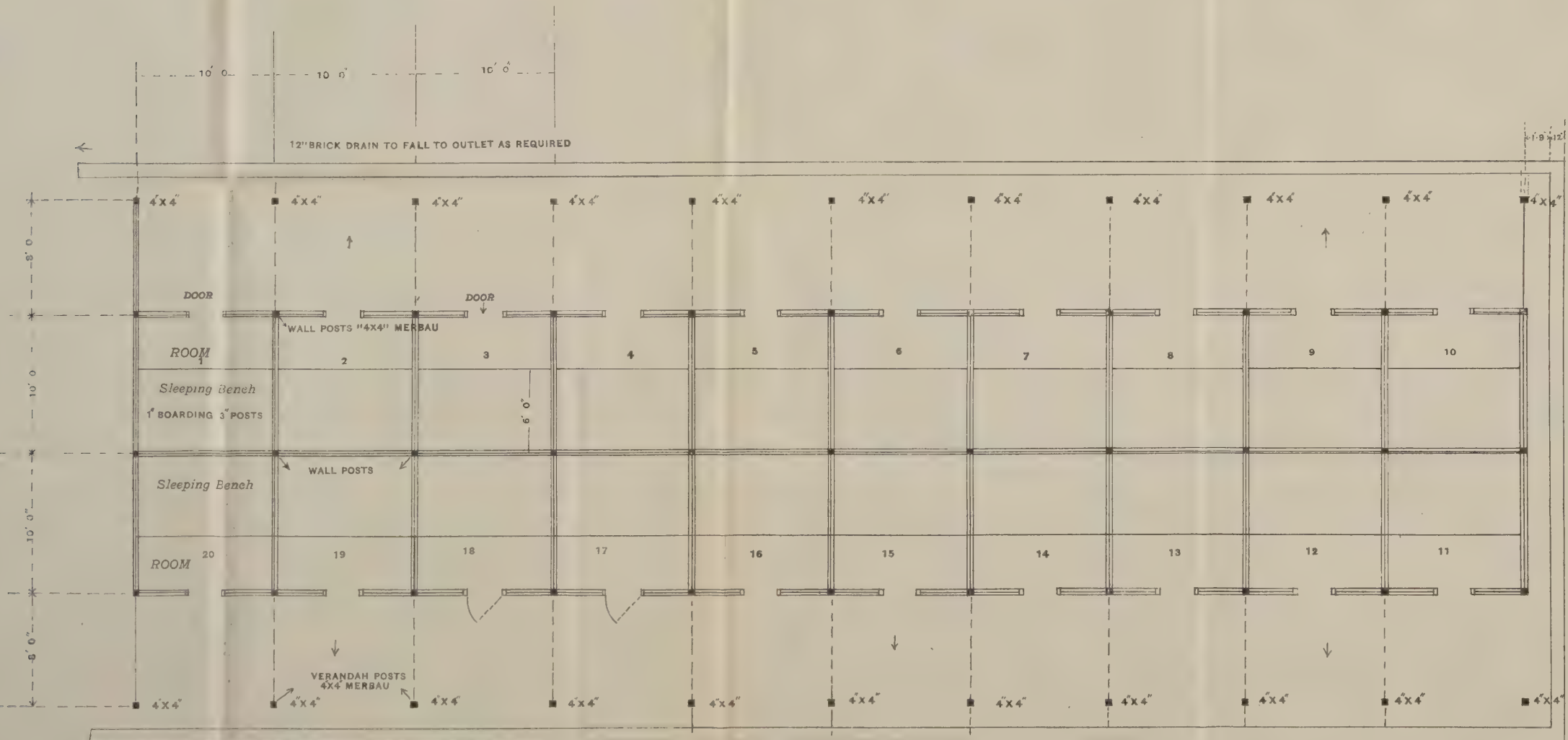
TYPE "C"



Elevation



Section



Plan

IF A MORE PERMANENT BUILDING IS REQUIRED, THESE LINES MAY BE CONSTRUCTED WITH CORRUGATED IRON SIDES AND ROOF - WITH WOODEN CEILING UNDER PURLINS AND A JACK ROOF.

COOLY LINES ERECTED WITH PERMANENT MATERIALS MUST HAVE PORTLAND CEMENT, CONCRETE FLOORS WITH CEMENT RENDERING. COOLY LINES ERECTED WITH TEMPORARY MATERIALS MAY HAVE LIME CONCRETE FLOORS WITH CEMENT RENDERING.



DETAIL OF MERANTI BOARDING



Detail of Doors
1 1/2" Meranti
Scale 1/4" to one Ft.

DOORS TO HAVE IRON STRAP HINGES AND HASP FASTENER WITH PADLOCK

N.B.

IN LOW LYING SITES THE FLOOR AND DRAINS MUST BE BUILT UP TO A SUFFICIENT HEIGHT TO CLEAR FLOOD LEVEL AND TO ALLOW THE DRAINS A FALL OF 1 IN 200 TO OUTLET.

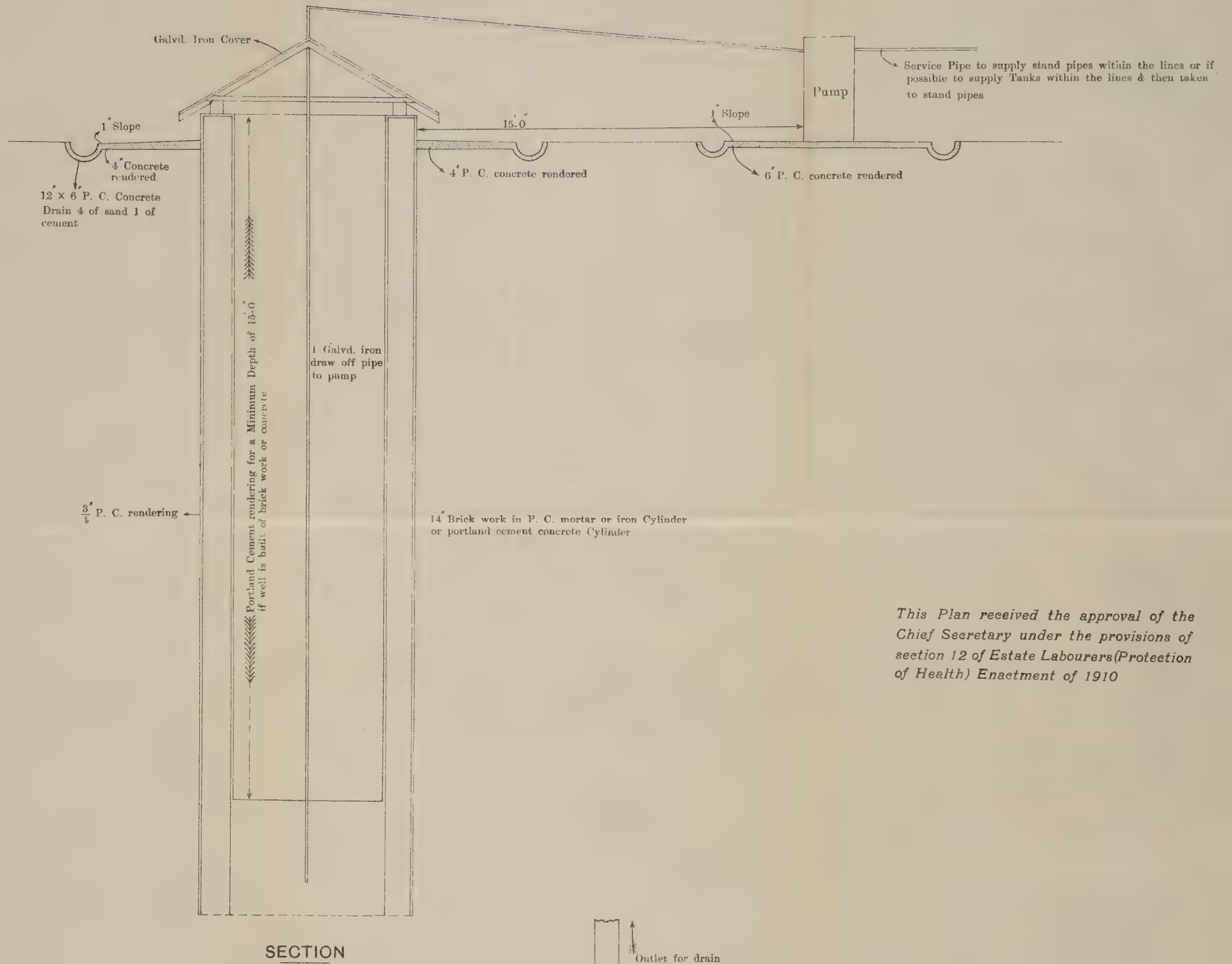
TYPE PLAN OF METHOD OF PROTECTING WELLS

— FOR —

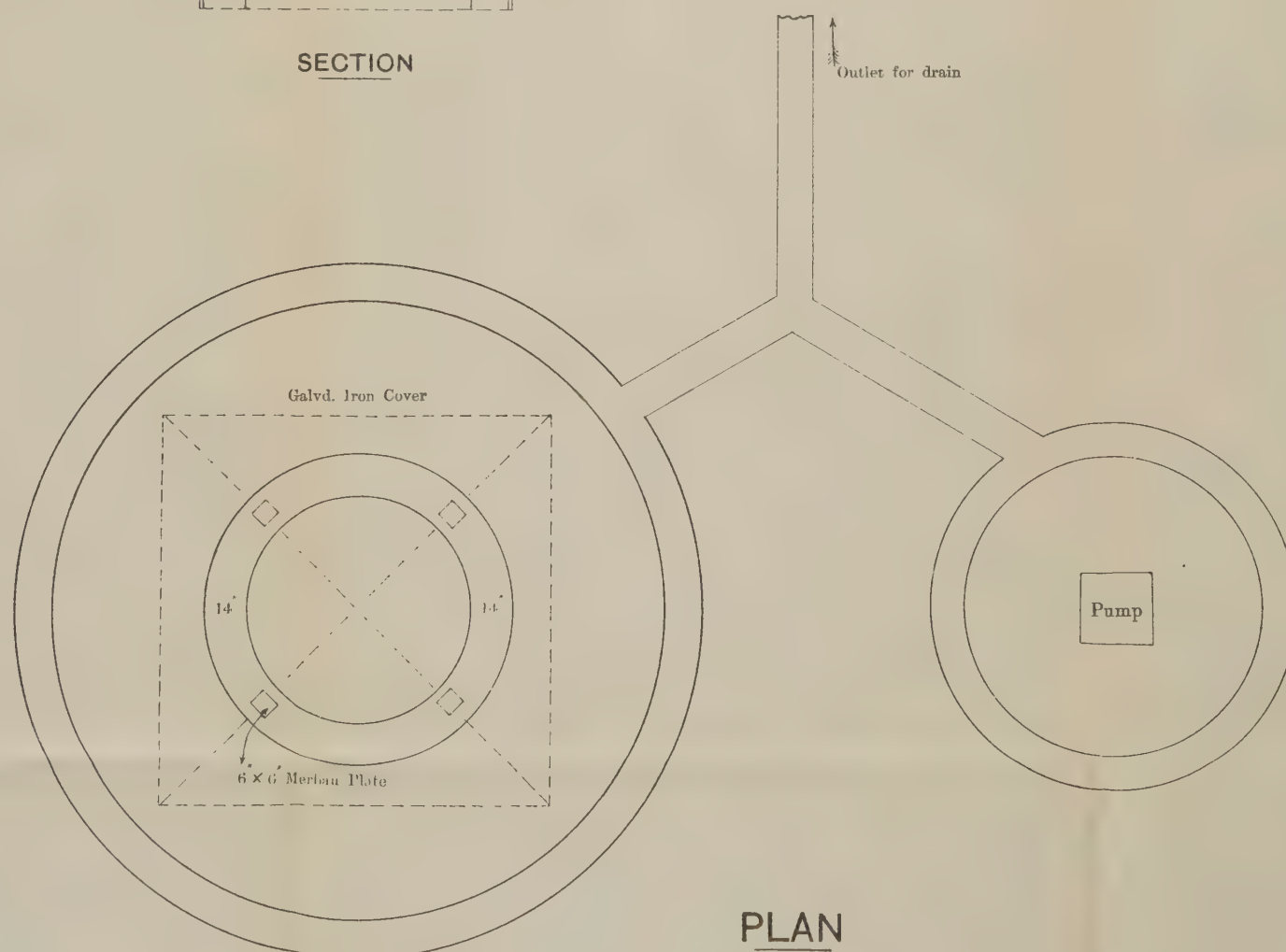
ESTATES

Type No. 1

SCALE 4 FEET TO ONE INCH



This Plan received the approval of the Chief Secretary under the provisions of section 12 of Estate Labourers (Protection of Health) Enactment of 1910

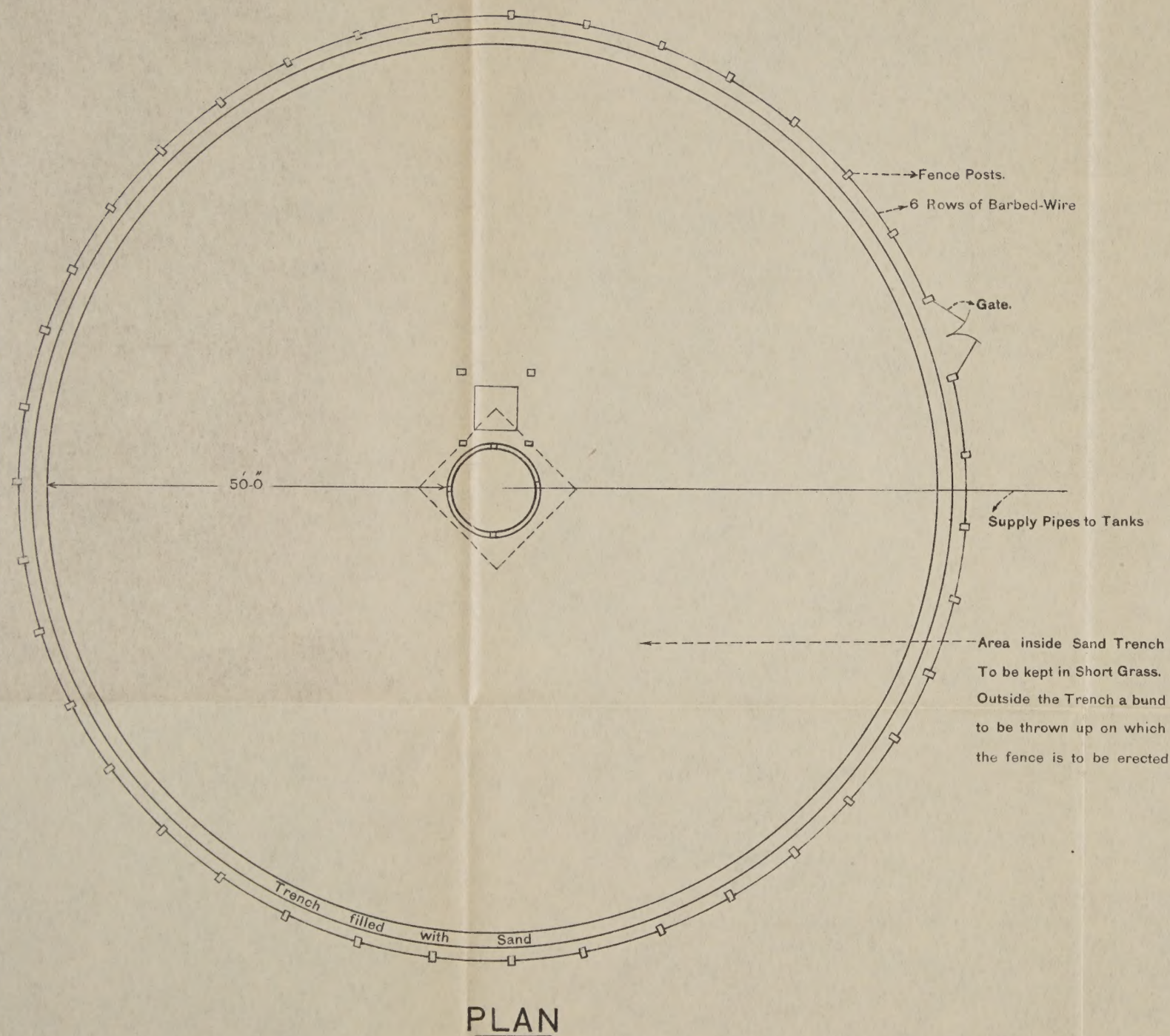


ESTATE WELL

SHEWING TWO METHODS OF PROTECTION FOR SHALLOW WELLS.

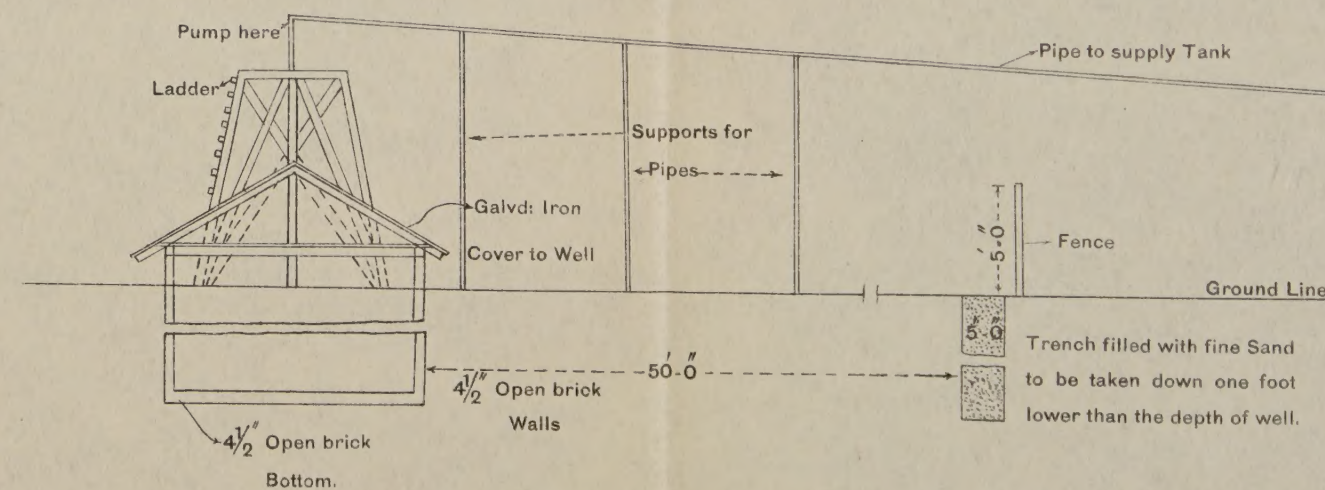
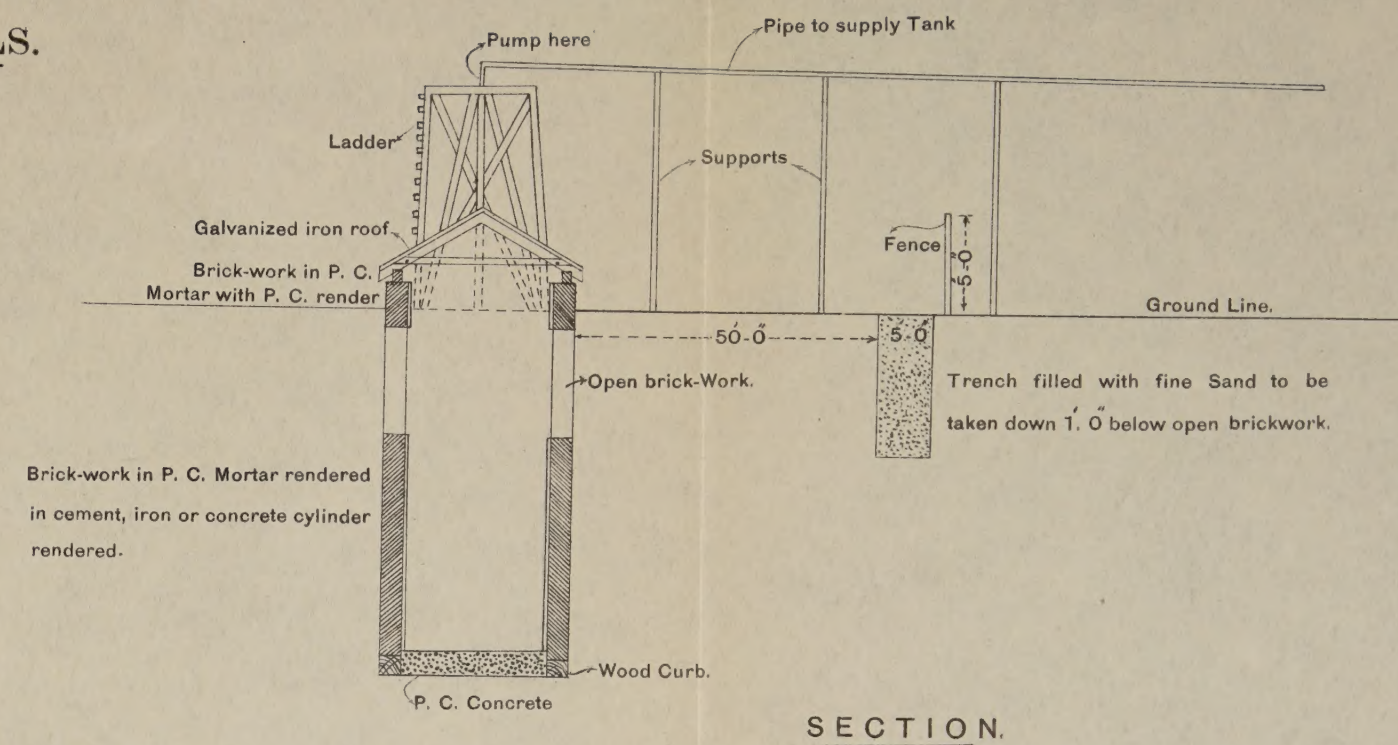
Type No. 2

NOT TO SCALE.



PLAN

This Plan has received the approval of the Chief Secretary under the provisions of section 12 of Estate Labourers (Protection of Health) Enactment of 1910



Type No. 2

Pipe to supply Tank

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18

Fig. 19

